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An index to the ninety-sixth volume of THE RAILWAY GAZETTE *covering the issues from January 4 to June 27, 1952, has been prepared, and is now available free of charge on application to the publisher*

Railway Regions

WHEN Parliament reassembles the Government Transport Bill will be one of the first measures for discussion. In considering the new organisation which that Bill will envisage the position of the six Regions of British Railways undoubtedly will attract considerable attention. Divergent views are held both within and without Parliament as to the place of the Regions in the future general organisation of British Railways and various suggestions as to possible modifications in Regional boundaries and practice have been discussed. Whatever changes may take place relating to the actual running of the Regions, and the need for many practical changes is widely accepted, a simultaneous alteration of boundary demarcation would introduce an unnecessary and disturbing complication. Organisational adjustments of any kind must tend to interrupt smooth working, but if they are accompanied by a territorial rearrangement there is grave risk that the attention of those whose energies should be devoted to implementing the new system may be confused and diverted with an overall loss of efficiency. At this juncture, after some five years of experience in the present Regions, sweeping innovations should be avoided and reforms could best be achieved by adaptation within the existing boundaries. The regional organisation has never been either rigid or permanent and advantage could well be taken of this elasticity gradually to make adjustments which ultimately would provide the area organisation envisaged by the Government. There seems no good reason, either, for the creation of additional Regions or Areas. Such a move would result merely in duplication of effort, increased correspondence and representation, and further calls on executive and managerial manpower. One respect in which an improvement could well be made is in the nomenclature to be used. In our view, the time is now ripe for the dropping of such terms as "Region" and reverting to "Railway." Personal associations, traditions and loyalties were a valuable integral factor underlying such titles as "The Great Western Railway" or "The Southern Railway," to name but two, and there are still many who regret the modern trend towards amorphism which finds expression in impersonal "Regions" and "Areas"—arefaction plays little part in stimulating human loyalties.

The Labour Party Conference

INTERNAL stresses of recent creation in the Labour Party have not prevented some vintage doctrine from being heard at the Morecambe Conference this week. Mr. Herbert Morrison's remark on Tuesday that they would not have finished with nationalising until they had "nationalisation of all the means of production, distribution, and exchange" came straight from the Rule Book. On the previous day the conference had opened its proceedings by approving the party's opposition to the Transport Bill, but a resolution that a Labour Government should nationalise without further compensation all industries denationalised by the present Government, and that all profits made during denationalisation should be expropriated, was defeated on a card vote after some excitement among the delegates. Although the defeat was heavy, the voting figures suggested many abstentions. There was further heated discussion on a resolution calling for a campaign of mass meetings demanding resignation of the Government, to be backed up by "other measures" if it proved ineffective. This resolution, also, was defeated after its proposers had refused to withdraw it. Little seems likely to emerge from such skirmishes that is calculated to appeal to those genuinely interested in solving the country's problems in the most practical manner.

Nigerian Railway Problems

BECAUSE quicker delivery of locomotives and spares on order in this country was needed, Chief Bode Thomas, Nigerian Minister of Transport, who spoke last week in London, expressed the view that the Nigerian Railway was at the moment unable to cope with its essential tasks. He had made urgent representations on this matter to the Colonial Secretary and the manufacturers, but he recognised that shortage of steel was a delaying factor. Between 35 and 40 per cent. of the total locomotive power of the Nigerian Railway lay idle in the workshops for want of spares. Some 150,000 tons of groundnuts from the last crop have still to be cleared, and this year's crop may total 500,000 tons. In a letter in our July 25 issue, Mr. D. C. Woodward, General Manager, Nigerian Railway, commented on the problem and explained that because of difficulty in obtaining spares the workshops had to manufacture them, and that men and machines had to be diverted from repair work for this purpose. For some time manufacturers have pressed for adequate ordering of spares by Colonial railways when contracts are placed for new locomotives, but budgetary reasons may sometimes prevent them from making provision for spares on the scale desired.

British Transport Commission Statistics

AN encouraging feature of the results for Period 8, the four weeks to August 10, is the continued high level of tonnages through the docks owned by the British Transport Commission. The total outwards tonnage was 2,931,000, compared with 2,523,000 for the corresponding

period of 1951. The greatest increase was in coal shipments, with 603,000 tons from Humber ports, against 353,000 last year and 545,000 tons from South Wales ports, against 461,000; most of the Humber and South Wales ports coal shipments for the period seem to have been coastwise; this may help to account for the decrease compared with 1951 of British Railways coal ton-mileages for the period. Shipping receipts were disappointing, at £1,634,000 compared with £1,665,000 last year, of which £1,083,000 was derived from passengers, against £1,103,000 last year. No doubt currency restrictions on Continental travel were partly responsible for the slight drop in ship passenger receipts, and perhaps also in merchandise receipts, which include tourists' motor cars. British Railways passenger journeys for June moreover show a slight decrease in second class, which now is confined to Continental boat trains. Restaurant car receipts for Period 8 were £267,000, against £305,000 last year, while refreshment room receipts—which may, however, have been increased by acquisition during the year of contractors' businesses—were £751,000 against £688,000.

Overseas Railway Traffics

OPERATING revenues of the Canadian National Railways for August improved by £746,000 to £19,081,000 and after allowing for a £516,000 rise in operating revenues, net revenue was £230,000 higher at £1,588,000. As compared with the equivalent period of last year, aggregate net revenue for the 35 weeks since January 1, 1952, was down by £1,770,000 at £7,424,000. The drop in aggregate net revenue may be attributed to a £13,991,000 advance in operating expenses, which accompanied the £12,221,000 improvement in operating revenues for the same period. South African Railways' traffics continued to rise in the fortnight ended August 30, with successive increases of £121,965 and £86,846. Receipts for the two weeks under review amounted to £1,946,420 and £1,963,520. On the aggregate S.A.R. traffics since April 1 were £1,773,371 higher at £42,915,071 on August 30. The overall decrease in Dorada Railway traffics for the year was reduced by £1,494 to £14,450 during August, and aggregate receipts now amount to £273,997.

East Indian Railway Reunion

THE 49th annual reunion dinner of the officers of the former East Indian Railway was held in London on September 24, with Mr. G. A. R. Trimming in the chair. During his speech, which is reported elsewhere in this issue, the Chairman referred to changes which had been effected by the re-grouping of Indian Railways. Mr. Trimming said that for sentimental reasons the new zonal arrangement would no doubt be viewed with regret; railways had lost that individual identity of which they had been so conscious. Their feelings were somewhat similar to those experienced when the company-managed railways passed over to State control. He referred to the area served by the Eastern Railway, in which lay the coal and mineral wealth of India and to the still untapped resources of the Central Provinces, which promise immense possibilities if the regrouping has been carried out smoothly. The partition of India had made the problem of re-grouping an urgent one, and had probably accentuated what, in effect, had been more or less under consideration by various Government administrations in India for many years.

Machine Tool Exhibition at Olympia

THE seventh Machine Tool Exhibition, organised by the Machine Tool Trades Association, closes tomorrow, October 4. It has been the subject of a series of articles, the last of which appears elsewhere in this issue. Many of the difficulties of recent years are due to there being fewer skilled men to produce more and more goods. Increased productivity of the machine itself appears to be one of the answers to the problem. While mass production methods can be successfully applied to a few specialised industries, they cannot be applied to the production of machine tools; in this sphere of engineering the skill of the individual operator is paramount. The exhibition has not only provided an excellent opportunity for home and overseas buyers to see the latest types of machine tools and equipment, but it has also provided a similar opportunity for machine tool operators visiting the exhibition to see the many and diverse types of machine tools being operated under service conditions using the latest types of cutting tools. The success of the exhibition can be gauged by the fact that during the first ten days, the number of visitors amounted to some 64,600.

Training for Transport Management

THE importance attached by the British Transport Commission, and by the railways before nationalisation, to training for management, and the regard paid to the claims of fairness, experience, and educational qualifications in selecting men for such training, are shown by Mr. Frank Gilbert, Principal Staff Officer of the Commission, in an article in the current issue of the *British Transport Review*. The selection of university graduates as traffic apprentices, provided there are plenty of chances for non-graduates, is supported by Mr. Gilbert on the grounds of the wider opportunities of a university education provided by the present State education system—still ignored by many critics—and of the need for transport to draw into its ranks the best possible brains. The value set by the former railway companies and the London Passenger Transport Board and now by the Commission, on training for leadership has led to the creation of costly training establishments such as those at Derby and Chiswick, on which there can be no calculable financial return; it is accepted that transport without training is unthinkable.

A New Line in Nottinghamshire

THE first new railway of any length to be constructed since nationalisation was opened in Nottinghamshire last week. It is a double-track line, some 7½ miles long, serving the new colliery at Calverton—claimed to be the most modern in Europe—and begins by connections with the Leen Valley line of the former L.N.E.R. (one-time G.N.R.) and with the Nottingham-Mansfield line of the former L.M.S.R. (Midland) at Bestwood, close to the point where these lines cross. Thence it runs roughly north-eastwards, some miles to the north of the Nottingham-Newark line. The evidence of standardisation which the signalboxes and bridges show is in contrast to the many signs of former Midland, Great Northern, and Great Central practice which remain in the Notts and Derby coalfield area, with its tangled railway geography. The earthworks on the new line, whose main features are described elsewhere in this issue, are considerable, and most of it is on embankment or in cutting. Mr. John Elliot said on the opening day that the sidings at Calverton have been designed to take the new British Railways 24½-ton coal wagon. The line and colliery are a remarkable example of the co-operation of two nationalised undertakings.

Rival to the Mountain Railway

IN an editorial article in the August 17, 1951, issue we drew attention to the rapid extension in Switzerland of transport to highlying villages and mountain summits by suspension lines, both *téléphériques* and chair-lifts. The economic advantage of each lies in the fact that costly permanent way construction is dispensed with, and natural obstacles such as ravines are simply dealt with by swinging straight across them. Hitherto the most daring of such spans have been confined to *téléphériques* in which the passengers travel in enclosed cages carrying from 8 or 10 to 35 to 40 persons, but the carrying capacity of the line is limited to two cages only, balanced against one another, and moving in opposite directions simultaneously. The latest type of *téléphérique*, however, such as that from Crans (Montana) up to Bellalui, is a combination of this

type with the chair-lift, on which completely-enclosed four-passenger cars can be run on to the carrying cables in any numbers successively, and the exceptional carrying capacity of 420 passengers an hour—considerably greater than that of the old-established funicular from Sierre up to Montana—is now attained. The passenger possibilities of this type of chair-lift, with enclosed cars, are likely to make a considerable appeal in future mountain railway construction.

The Changeover at Euston

PASSENGERS to and from Euston, both long-distance and suburban, are faced in the next few weeks with the prospect of some delays and the certainty of temporary changes in established travel habits. Season ticket holders from the suburbs and occupants of sleeping cars, long accustomed to observing each other impersonally from trains on parallel tracks edging their way into the terminus in the morning rush, may now find themselves sharing the same compartment from Willesden. The main-line platforms at Wembley Central, normally active only when there has been an interruption of electric services, will serve as a terminus for certain trains from the North on some Sundays. No traveller, however, can complain that he is unprepared for these changes. From the beginning of the resignalling and layout alterations at Euston that make them necessary, the public has been kept informed by notices, posters, handbills, and in the Press of what is in hand and the improvements it will effect on completion. These measures have aroused and sustained interest in the progress of the work, and the London Midland Region has every right to hope that the circumstances of the weeks ahead, foreseen and otherwise, will be accepted with understanding.

Signs at German Level Crossings

AFTER some experiments the German Federal Railways are to make trials in practice of new forms of warning board signs at the approach to level crossings not protected by lifting barriers. The St. Andrew's cross sign, well known on the Continent, is now to be arranged with the acute angles placed vertically and is to be painted somewhat differently from the style used hitherto. In addition a reflecting surface will be provided, to be illuminated by approaching headlights. The crosses on the principal roads will be coloured red and white and those on roads of lesser importance plain red. The new designs have been found to be more readily recognised by road vehicle drivers and foot passengers and to possess greater reflecting power than earlier ones. The question of level crossing protection generally was dealt with at considerable length by Dr. Alfred Dobmaier, Signal & Telecommunication Engineer, German Federal Railways, in *Der Eisenbahn-Ingenieur* for March this year, where the arrangements used in Germany, and to some extent elsewhere, were reviewed and their advantages compared.

Traction Motor Weights

THE gradual but continuous progress in traction motor design as reflected by weight per unit of output is well shown by a series of figures published in a recent issue of the *Oerlikon Bulletin*, and which cover d.c. and a.c. nose-suspended and springborne types installed by the company since 1925. In that year, 1,500-volt motors of 330 kW. one-hour output were installed in Paris-Orleans Railway locomotives and weighed 20·8 lb. per h.p. The following year 500-volt motors of nose-suspended type for the Norte, in Spain, weighed 20 lb. per h.p. By 1950, d.c. motors of 1,500 volts being supplied to the French National Railways had a weight of only 8¼ lb. per one-hour horsepower on an output of 1,040 h.p. Others built for Netherlands Railways locomotives, wound for 750 volts, were even better, weighing only 7·6 lb., per one-hour h.p. Single-phase 16·6-cycle motor weights given are better still, ranging from 7·9 to 6·3 lb. per one-hr. h.p. for three types built between 1939 and 1951, all three values being better than so far attained with 50-cycle single-phase machines, the weights of which are 8 to 9 lb. per one-hr. h.p.

Statistics Run Wild

SINCE the British Transport Commission came into being it has run no risk of incurring criticism for the lack of statistics it has produced. These may not always have been in a form which commended themselves to the most avid seekers after knowledge, but at least they have been presented in considerable volume both currently, as in *Transport Statistics*, and annually in the report of the Commission. These have been the two main sources of supply, but there have been others less regular in their appearance.

Of the value of many statistics related to transport operation there can be no doubt, especially if they are concisely presented and made available expeditiously. It must never be overlooked, however, that services should come first and statistics relating to them should come second. Moreover, whatever the academic interest of detailed statistics, the value of having them should be weighed against the cost of collecting them. Unless the figures presented can be guaranteed as to their accuracy within very small margins of error much, if not all, of their value will be vitiated.

An outstanding example of the costly collection of statistics which are in the highest degree unlikely to prove sufficiently accurate to be useful when they are assembled is at present contemplated by the British Transport Commission. In our view, the cost of collecting the information that is sought will be so large, the disturbance to the normal duties of railway men so great, and the irritation likely to devolve upon the fare-paying passenger public so considerable, that even at this late stage it would be far better if the project were dropped. During the period October 5 to October 11, both days inclusive, it is proposed that a general census of passengers should be taken. Six forms have been prepared, and printed, and distributed throughout the railway system. It is probably not far out to guess the number of forms at a figure in excess of two hundred thousand. In addition, voluminous details have been given as to the way in which the census forms are to be completed.

One form calls for a return of the number of passengers using the trains at each station. After particulars of the train—the booked time of leaving the starting point, the starting point and destination—numbers are required of all the passengers divided as between first and third class joining and alighting from the train at that particular station on each day of the week. A note has to be made of the principal type of tickets held by alighting passengers and there is a further space for "remarks." This column will be filled in where the loading of the train is affected by trains running out of course or by other exceptional causes such as the incidence of a local event. If, for example, schools or works are closed and the loading of trains is affected "a remark must be made," and if possible a rough estimate must be given of the number of regular passengers who normally would have used the service.

A second form calls for a return of the number of seats and passengers in the trains arriving and leaving the station, together with similar details of the principal types of tickets held and any relative remarks. The foregoing are the two principal forms which have to be completed at all stations and which are to cover all booked passenger trains, excluding relief, unadvertised workmen's and excursion trains. On the other hand, all railway staff travelling to and from duty are to be included. Why, in particular, relief trains are excluded seems on the face of it to be strange, for presumably these will be run only if it is necessary to supplement normal services.

There are also four summary forms. These apply to each train and call for details of the number of seats provided and the number of passengers using the particular train. The route miles between starting point and destination of the train has to be given to two decimal places and then the number of seats divided into first and third class provided on the first day of the week, followed by any variation on subsequent weekdays of the seating available. Then on each weekday statistics are required of passengers in each class joining or alighting from the train and also in the train when it leaves the station. After

this, the weekday total of passengers in the train on leaving the station and the principal types of ticket held by alighting passengers has to be given. This is followed by a figure of first and third class seat-miles, first and third class passenger-miles, the average load of first and third class passengers, and then a percentage figure expressing the load factor for both first and third class. Our principal criticism of these forms is that the space left for remarks seems to us to be quite inadequate!

We hold the gravest doubts as to whether in the compilation of these forms or in the preparation of this scheme any consideration based on experience was given to the practicability of implementing this census. The additional burden of work which will be placed on the station staffs, guards and regional headquarters clerical staffs, would be out of all proportion to the value of the statistics obtained, even supposing that they were collected reasonably accurately. From a practical viewpoint, it is more likely that the census will be taken without undue regard to the instructions which have been issued. That will not enhance the accuracy of the returns, but it may obviate a good deal of the extra work which otherwise would be involved.

If the scheme were assured of being put through with a standard of accuracy which would allow for a margin of error of something of the order of five per cent. it might be worth while on the basis of a research experiment, but we do not believe that even the promoters of this census can hope for so small a margin of error. One of the statistics which the British Transport Commission might well make available to the Minister of Transport is the detailed cost of this census so that he may be in a position to answer any question which may be raised in the House of Commons.

Railway Links in East Africa

SINCE 1949 surveys and economic investigations have been proceeding to establish the prospects for construction of a railway from Northern Rhodesia to Tanganyika. This week two exhaustive reports on the subject have appeared, one on the engineering and the other on the economic implications of the scheme. The two-volume development survey report has been prepared for the Colonial Office by Sir Alexander Gibb & Partners, of London, and Overseas Consultants Incorporated, New York. Acknowledgment is given by the Secretary of State for the Colonies to the part played by American assistance in the development surveys which provided the data for the report. Not only did Overseas Consultants Incorporated participate in the field work, but the Economic Co-operation Administration and the Mutual Security Administration contributed to the cost. A one-volume report on engineering surveys for the proposed railways, prepared by the East African Railways & Harbours Administration, has been published simultaneously. Both are the subject of an article on pages 374-5 this week.

The north-south railway link, says the development survey report, "would bring a step nearer to fulfilment the dream of that practical visionary, Cecil Rhodes—a railway from the Cape of Good Hope to the Nile." Leaving the Rhodesia Railways system near Broken Hill, it would run for some 1,100 miles to join the Central Tanganyika line near Kilosa. Plans have been promulgated already for a connection from a junction near this point to the Tanga line near Korogwe, which in turn is connected with the main Kenya & Uganda system. An east-west connection of about 400 miles has been surveyed from the Rhodesia-Tanganyika line at Makumbako, near the head of the Kilombero Valley, to Nachingwea, railhead of the line from the coast at Mtwara. The development report warns of the urgent necessity of agricultural development in the territories through which the railways would pass in view of the way in which population everywhere is fast outstripping food production, and considers that an increase in available food supplies is the most important factor in the maintenance of peace and order throughout the world. It suggests, however, that at this stage a railway may not be the most economic form of transport. Its position relative to road transport has changed out of recognition since the days when the railway was competing with the ox wagon, and, to quote from a company prospectus of 1892, "transport of goods from the Cape to Fort Salisbury costs £45 per ton and takes three months on the road and is only practicable in the dry season." The report therefore suggests, as far as the complete north-south link is concerned, that the correct approach today may well be to allow road transport to carry the burden hitherto borne by the low-cost railway line, which almost everywhere in Africa has had subsequently to be re-aligned and reconstructed to heavier standards, often at considerable cost. Rail construction might be postponed until traffic has begun to build up to such a point that higher standards of rail construction are warranted and their sound economics is assured. In accepting this conclusion, consideration may well be given to the influence of diesel traction on the point at which railway operation becomes economic.

On the other hand the mineral resources in the region to be served by the east-west line are considered likely to call for the early provision of rail facilities. In south-west Tanganyika coal and titaniferous manganite exist in the catchment of the Ruhuhu River, north-west of Songea. In this region are found the Ngaka and Kitiwaka coalfields and the Ligango iron-ore deposits, believed to be among the largest of their kind in the world. It is thought unwise to develop the coalfields in the hope of competing with South African sources of supply, but there are prospects of consumption in Nyasaland, and the likelihood of demand from local industries reaching 500,000 tons a year. The report recommends that an assurance should be given to those concerned with coal, iron, and pulp developments in this area that it is the intention to link the area to the sea either *via* the Southern Province line to Mtwara or the Central Tanganyika line. The latter could be achieved over the northern portion of the proposed north-south route. Surveys of the east-west line so far envisage the connection at Makumbako, as shown in the map on page 374, but the railway survey report mentions the possibility of a shorter connection by leaving the route surveyed near mile 380 and proceding *via* Mbunga down the Pitu Valley to Mpanga, near Utengule. It is pointed out, however, that there would be little in favour of such a route, which would be through unproductive, fly-infested country for the greater part of its length.

The heavy engineering works that would be involved on some sections of the north-south line are described in the article on pages 374-5. Over-riding importance was attached in East Africa and in London to the north-south link, although the outlet *via* Mtwara was important. The link proposed would, it was considered, assist the integration of the East and Central African railway systems, and the outlet at Mtwara to the Indian Ocean could, to some degree, relieve the line to Beira. In general the engineering survey has proved the practicability of constructing railways over the routes stated in the terms of reference. It is probable that construction would be spread over a number of years and that extensions are likely to move forward gradually into country capable of development. As an example of the probable course of construction, the report suggests beginning with a section running southwards from Morogoro into the Kilombero valley, and continuing the existing line from the coast westwards from Nachingwea towards Songea. A meeting between these sections would provide both the suggested outlets from the South-West Tanganyika minerals area and complete the north-eastern half of the whole project. Between Mpanga and Makumbako it would involve one of the most difficult sections of the north-south project, but this would be by-passed if it was decided to effect a junction between the two lines at Mpanga by following the Pitu Valley route.

The two reports represent the results of some two years' work by staff of the consulting engineers and the East African Railways & Harbours Administration. The importance of the project and the urgency of the consideration it demands are epitomised in the comment that by the development of hitherto unproductive areas Africa can be an important contributor to world stability, a responsibility not to be lightly ignored.

July-August Operating Results

No. 8 of *Transport Statistics* covers the four-week period from July 14 to August 10, which is the favourite holiday season and does not produce a large volume of freight train traffic. This year British Railways originated 17,971,000 tons, the smallest quantity for any period since August, 1949, and 156,000 tons below the corresponding four weeks of 1951. A disconcerting feature was the decline in merchandise to 3,217,000 tons, the lowest forwarding in any period since nationalisation. The decrease from 1951 was 243,000 tons (7 per cent.) and the total loss of merchandise during the first 32 weeks of this year was 1,352,000 (4·1 per cent.). During these weeks British Railways carried 966,000 more tons of minerals and 697,000 more tons of coal, leaving them with a balance of over 300,000 tons on the right side.

The net ton-mileage of 1,408 million in the 8th period was lower by 73,751,000, or 5 per cent. Every Region had a substantial decrease except the North Eastern, which worked 1,000,000 more ton-miles in moving minerals and coal. Over the whole railway system the trend of ton-miles has been downward since May, the aggregate decrease for 32 weeks being 223 million, or 1·6 per cent. During that time the Eastern Region had a small increase and the North Eastern worked nearly 36 million more ton-miles, or 2·6 per cent. Except in January, the average length of haul was shorter than in 1951, the difference in the eighth period being over 3 miles.

British Road Services

The decrease in rail traffic did not benefit British Road Services, whose carryings were lower in each four-week period this year. The total decrease for 32 weeks was 2,276,000 tons (8 per cent.). In the July-August period Road Services carried only 2,726,000 tons—the first time since 1950 that their tonnage in any four-week period has been below 3,000,000. The decrease from the corresponding period of 1951 was 510,000 tons (15·7 per cent.) and vehicle miles were reduced by 7,800,000 (14·4 per cent.). Nationalised transport by rail and road appears to have reached a stage when supply exceeds the requirements of traders. It would be easier to judge future developments if table E.1 in *Transport Statistics* were recast to show percentage variations in British Road Services' results and if aggregates of their statistics were included in the special sections issued four times a year. Useful information on these lines is supplied for Road Passenger Transport.

Railway Freight Statistics

In the July-August period British Railways forwarded 2,246,000 loaded wagons, 65,000 fewer than in 1951. That was the smallest number forwarded in any four-week period since nationalisation and the average train hauled one wagon less. Wagon miles at 292 million were down 18 million (5·9 per cent.). The average wagon load at starting point was raised by nearly 5 cwt. to 8·45 tons, the highest weight for this particular period, but the train load of 148 tons was lighter by 4 tons. Fewer freight train miles were run in all Regions, so that the total mileage of 9,539,000 was the lowest on record for any four-week period and 227,000 below last year (2·3 per cent.). Freight train engine hours were reduced by 64,000 (5·8 per cent.) to 1,044,000 and, though coaching steam train miles were somewhat higher, coaching steam train hours were cut by 11,000 (1·0 per cent.).

Freight train speed improved by nearly a third of a mile an hour to 9·14 m.p.h. Every Region contributed to this result, the London Midland reaching 8 m.p.h. for the first time this year, the Scottish recording 10·86 m.p.h., and the North Eastern 11·2 m.p.h. The average speeds of both steam and electric coaching trains were slightly higher, the Southern Region setting the pace with excellent figures of 16·01 m.p.h. for steam trains and 21·03 m.p.h. for electric trains.

On the whole the eighth period of 1952 was a lean time for freight movement on British Railways. The operating performance of the Western Region was especially disappointing, seeing that its work was lightened by reductions of 5 per cent. in originating tonnage, 5·6 per cent. in the number of loaded wagons despatched, 8·4 per cent. in wagon miles worked and 7·4 per cent. in output of net ton-miles. A trifling increase of 6,000 on 1951 in coaching train miles left that mileage 44,000 below the 1950 level. A fine opportunity to recover the mobility once upon a time furnished by the Great Western Railway would seem to have been missed.

Electrified Freight Lines

When we reviewed the July operating results on September 5, we suggested that it would be an advantage to have a commentary from British Railways on the operating results of the Manchester-Sheffield-Wath electrified lines. The July-August showing emphasises the need for an official explanation. Compared with the March period, freight train-miles were down 31 per cent. and wagon-miles 32 per cent. The wagon-miles worked in a train engine-hour dropped from 133 to 120 and the train speed of 7·37 m.p.h. was the slowest for any period since the opening of the Wath-Dunford Bridge section. Of the 47 mixed traffic locomotives installed on the section, no fewer than nine were under or awaiting repair on August 10. In May two locomotives were under repair, in June three and in July six. That is an extraordinary record of unreliability for a stock of new electric machines.

Passenger Traffic Trends

Details are now available for British Railways' passenger receipts and journeys to the end of June. The number of journeys originating in June was 79,293,000, a decrease of 3,004,000 (3·7 per cent.) on 1951. The decrease would have been larger if 1,324,000 more people had not taken excursion, weekend, or cheap day tickets at an average price of about 1s. 6d. A great change took place in the trend of passenger bookings at the end of March and was most marked in the Southern Region. In 1951, British Railways originated 19,633,000 journeys in excess of 1950; the Southern Region accounted for 13,518,000 of the total increase, or nearly 68 per cent. In the first quarter of this year British Railways originated 9,808,000 more journeys than in 1951; the Southern Region again produced more than 50 per cent. of the increase. In the second quarter British Railways had 4,812,000 fewer people to carry and the Southern Region lost 4,598,000, or 95 per cent., of them. Apparently the Southern Region has lost many customers through the March increase in London Area fares and gained few through the May reduction in fares outside that Area.

In June, the number of first class passengers was over 25 per cent. less and, though the average receipt per journey was 29 per cent. higher, total receipts decreased by 3·9 per cent. During the first half of this year, first class travellers numbered 10,557,000, a decrease on 1951 of 1,828,000, or 14·7 per cent. Receipts amounted to £5,631,000, an increase of £34,000, of 0·6 per cent., the whole of the increase accruing in the first quarter of the year. The falling off in the higher class of travel has spread to all Regions; the Southern and Western Regions booked more first class passengers in 1951 than in 1950, but have booked fewer throughout the first half of 1952. Presumably a fresh adjustment of the accommodation provided to the number of ticket-holders is being made on many train services, for a legion of empty first class seat-miles has been worked since 1949.

Road Passenger Transport

The expansion of the Road Passenger Transport undertakings acquired by the British Transport Commission forms a striking contrast to the contraction of railway passenger services. In the first 32 weeks of the year, the total number of road journeys was 1,443 million, an increase on 1951 of nearly 21 million (1·4 per cent.). In 1951 the Tilling Group increased the number of its passengers by 14,924,000 (1 per cent.). It maintained that rate of increase to August 10 this year, despite a setback during 12 weeks of March, April, and May, carrying 9,058,000

more people. In 1951, the Scottish Group carried 8,641,000 fewer passengers (1·1 per cent.). It wiped out that loss completely this year, having increased carryings in every four-week period and a total increase on August 10 of 11,907,000 (3·2 per cent.). In dealing with the additional business, the Tilling Group ran 5,165,000 more car miles (2·3 per cent.) and the Scottish Group 3,534,000 (3·2 per cent.). The two Groups had 13,829 buses and coaches on the road in August, 430 more than a year ago, and yet had 387 serviceable vehicles in reserve. On the same date British Railways had 38,645 passenger carriages available, 238 fewer than a year ago; 3,219 carriages were under or awaiting repair, 252 more than in August, 1951. Undue preference would seem to be given to road passenger transport in the matter of supply and maintenance of vehicles.

LETTERS TO THE EDITOR

(*The Editor is not responsible for opinions of correspondents*)

Oxted Line Services

September 26

SIR,—The introduction of L.M.S.R.-type and B.R. standard class "4" 2-6-4 tank engines on Oxted line trains in the Southern Region has received notice in your columns from time to time, and one correspondent rightly deplored the failure to take advantage of the greater engine power now available to reduce the running times of trains.

In the Winter timetables there is now evidence of some steps being taken in this direction, though it applies only to business trains. Arrivals and departures from Victoria and London Bridge remain unaffected, but earlier arrivals and later departures are to be found at the provincial termini.

The savings are not large; the most is 8 min. cut from the old 6.58 a.m. from Brighton to London Bridge *via* Uckfield, which now starts at 7.6. Other trains retimed are the 6.15 a.m. Brighton to London Bridge *via* East Grinstead (now 6.22), 8.14 a.m. Brighton to Victoria *via* Uckfield (now 8.20), 8.18 a.m. Uckfield to Victoria (now 8.23). In the down direction the savings are not so great.

No changes have been made in the Eastbourne-London service by the Oxted route, presumably on account of the difficult nature of the single line between Polegate and Eridge.

Yours faithfully,

P. S. PALMER

18, Stanford Avenue, Brighton, 6

Electric Locomotive Performance in Switzerland

September 11

SIR,—I was most interested to read Mr. Cecil J. Allen's article on "Electric Locomotive Performance in Switzerland" in your September 5 issue, as from my own experience during a recent short holiday in Lausanne, I can endorse the author's remark as to travel in one of the Swiss lightweight expresses being a "startling experience."

Out of three runs between Lausanne and Geneva, I was fortunate to record two even superior to that tabulated by Mr. Allen. On the first of these, "Re4/4" No. 442 of Lausanne depôt (the engine concerned in Mr. Allen's run) made a rapid start on the 5.32 p.m. train, passing Morges, 7·8 miles, in 7 min. 19 sec., Nyon, 23·9 miles, in 19 min. 44 sec., and with a smart stop reached Geneva, 37·4 miles, in 31 min. 26 sec. The load of ten light vehicles included one of the rubber-tyred Michelin coaches and was of about 265 *tonnes* tare and 280 full, and the smart running converted a 6-min. late start into a 2½-min. early arrival, on the easy booking of 40 min. The other run featured No. 429 of Zürich depôt with a load of eight light vehicles of about 220 *tonnes* tare and 235 full. An even faster start was made, Morges being passed in 7 min. 2 sec., Nyon in 19 min. 42 sec. and Geneva reached in 31 min. 49 sec., and in this case a late start of 4 min. was cut by 2½ min. on the much harder booking of 34 min. applicable to this train (the 2.10 p.m.).

In the opposite direction a run on the 3 p.m. ex-Geneva with No. 445 of Lausanne depôt and a ten-vehicle load of about 280 *tonnes* tare and 300 full produced times of 14 min. 2 sec. to Nyon (13·5 miles), 15 min. 3 sec. thence to Morges (16· 1 miles), and 8 min. 38 sec. for the final 7·8 miles from there to Lausanne. A further run from Nyon to Morges on the light five-coach formation of the 9 p.m. from Geneva with No. 447 of Lausanne depôt and 137 *tonnes* tare (145 full) took only 14 min. 20 sec. for the 16·1 miles as against 15 min. booked, while No. 410 with a similar load on the same train, starting from Morges passed Denges 2·8 miles in 2 min. 51 sec. and was stopped by signal in Renens, 5·0 miles, in 5 min. 29 sec.

Some good running was also enjoyed on the Lausanne-Neuchâtel line as far as Yverdon. The best run was again with No. 442 on the 9.52 with a thirteen-coach train of about 360 *tonnes* tare are 385 full, when the 24·8 miles from Lausanne to Yverdon were run in 24 min 32 sec. including the service slack through Renens, a p.w. slack to about 20 m.p.h. through Eperdes and the cautious running round the curves into Yverdon. Net time would be about 23 min. against the scheduled 28.

Yours faithfully,

FRED. G. PLANT

38, Third Avenue, Renfrew

Preservation of Locomotives

September 20

SIR,—I would like to endorse the plea of your correspondent, Mr. R. A. Pascall, in the September 19 issue, concerning the preservation of ex-G.E.R. locomotives.

As he points out, there is no single G.E.R. locomotive preserved for posterity at any place in Great Britain. Yet what feats of contemporary locomotive performance could eclipse the feats of the "Clauds" on the "Norfolk Coast Express" or those of the "1500's" on the 82-min. booking of the "Hook Continental" to Parkeston. For evidence of this one need look no farther than the *G.E.R. Magazine* of February, 1912, wherein are contained "Norfolk Coast Express" runs in 1911, on which lost time was gained sometimes to the extent of 5 min. with trains of over 300 tons, and to Mr. Cecil J. Allen's book "Famous Trains" in which he described the down "Continental" as being the hardest locomotive turn in the country. And what would look lovelier than a "Claud" or a "1500" in her original livery of royal blue, with red lining and coupling rods?

As regards Mr. Nock's letter on mile-a-minute schedules in the same issue, it may be of interest to point out that the first day of the "Broadsman's" 60 m.p.h. schedule between Ipswich and Norwich made a run which would compare well with those which he mentions. The 46½ miles from Ipswich to Norwich were covered in 41 min. 50 sec., with a maximum speed of 92 m.p.h. in the dip before Diss; and the distance of 25·4 miles from Finningham to Mile Post 112 was covered in 18 min. 44 sec. Speeds of 90 m.p.h. were also attained before Flordon, and again shortly after passing Swainsthorpe. The total running time from London to Norwich (115 miles) was exactly 113 min. The train was hauled by the 4-6-2 locomotive No. 70007 *Coeur-de-Lion*, ably driven by Driver P. Smith, of Norwich, and consisted of 9 coaches, weighing 309½ tons tare.

Yours faithfully,

B. D. J. WALSH

The Railway Club, 57, Fetter Lane, London, E.C.4

THE SCRAP HEAP

Lost Property

A wallet stolen 27 years ago on the train between Perth and Port Augusta, Australia, has now been claimed by Mr. Francis Ivor Newton, of Burton, Christchurch, Hants. It was recently found hidden behind a cloakroom wall at Port Augusta Station. In it was £40, a bank draft for more than £1,000, and a birth certificate.—*From the "Daily Express."*

Keeping Politics out of Railways

British Railways seemed rather scandalised when I asked yesterday whether an electioneering train journey on the lines of Mr. Eisenhower's "whistle stop" tour could be organised for party leaders in this country.

A special train could be arranged, if rolling stock was available, an official said, but:—

We do not allow political campaigns on Railway Executive property;

We do not allow the public on railway sidings;

We have not got an open observation car from which the candidate could speak.

Clearly a "whistle stop" tour here would start under difficulties.—*"Peterborough" in "The Daily Telegraph."*

Stationmasters' Top Hats

Mr. D. S. M. Barrie, Public Relations Officer, the Railway Executive, has written to the Editor of the *Evening Standard* to explain the position regarding the issue of silk hats to principal stationmasters, and to correct an impression given by an article in that paper that their issue was to be discontinued. Mr. Barrie writes:—"British Railways are not discontinuing the issue of silk hats to their principal stationmasters, as suggested in your leading article of September 20. The arrangements have, however, been revised, so that while in some cases a silk hat will not be issued after the present occupant ceases to hold office, other stations such as Charing Cross, Birmingham Snow Hill, Cardiff General and Bristol Temple Meads have been added. Silk hats and morning suits will continue to be worn on suitable occasions by the stationmasters at 26 important London and provincial stations, including the ten principal London termini."

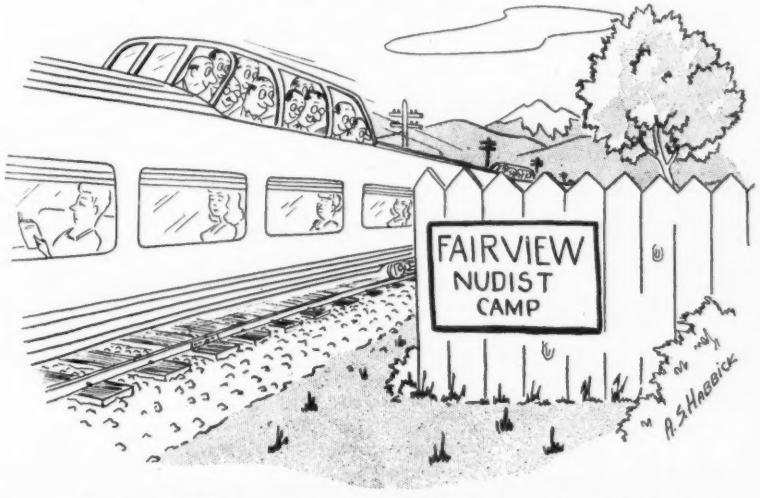
Term Time Again

He (Brown) is an immensely immaculate, calm, City man, seeing off a small boy going away to school for the first time—a small boy who looks grubbily travel-stained already and paralysed by gloom. . . . The whistle blows, the train moves. Mothers step back and decorously wave, remembering their instructions about "scenes." Brown takes his boy's hand, and then he does a surprising thing; for instead of shaking and letting his son's hand go, he maintains his grip. The train gathers speed, and Brown, immaculate still, his umbrella at the trail, gallops alongside, still holding his son's hand.

He cannot have run so fast nor so far since he last played rugby, and he dodges the mothers now like a determined three-quarter as he pursues the train.

His small son stares at him from the carriage in utter astonishment; and then the boy's face breaks into an enormous grin, and seeing that, Brown lets go his hand and halts. He has done his job. — *From the "Evening Standard."*

What the Eye Does not See . . .



Cartoon without comment from "Wheels," the journal of the American Car & Foundry Company

Departmental Puzzle

The Treasury's approach to the facts of (nationalised) life seems a trifle eccentric. In June the Hotels Executive put up the price of a State-owned (or should one say State-cooked?) lunch in a railway dining car to 7s. 6d., with coffee at 1s. extra. The Treasury has now informed the Society of Civil Servants that officers who have to lunch on a train during a journey which entitles them to a subsistence allowance may charge 6s. 6d. for it. . . . It may be that we should expect our civil servants to cut out after-dinner coffee, but even if they cut out soup as well they will be presented with a bill for 7s. 6d.

Would the Hotels Executive accept a voucher on the Treasury for 6s. 6d. in payment for a 7s. 6d. lunch? Is the ruling part of a new Government policy for encouraging the eating of sandwiches by railway travellers?—*From "The Manchester Guardian."*

Fiat Justitia

(New Light on an Old Problem)

Listen, all would-be "get-rich-quickers,"
To the sad tale of William Stickers,
Who found himself severely laid for,
Through pinching space he hadn't paid for.
Not only, for these depredations,
Has he been barred from railway stations,
But British Poster Spaces (Inc.),
Have threatened poor old Bill with clink;
In short, in these commercial strata,
William is *persona non grata.*
Walls, fences, bridges, all proclaim
His ignominy and his shame;
In terms which cannot be disputed:
"Bill Stickers will be prosecuted!"

Usually the march of time
Expunges pettifogging crime.
Had he committed barratry,
High treason, mayhem, piracy,
Had he deprived a soul of breath
By battle, murder, sudden death,
There might have been some condemnation
Compatible with the occasion;
Probably (justice feeling tender)
He'd get off as a first offender.
But, no—his crime (already stated)
Cannot be lightly expiated.
For those who make Big Business sore
Will get more than they bargain for.

With objects not a bit sublime,
But no doubt fitted to the crime,
They say that, when they've jugged poor Billy,
Instead of feeding him on skilly,
He'll have to live on poster paste
(Almost identical in taste),
A most unappetising diet,
I'm told by those who've had to try it;
So, let this be a warning, friends,
Lest you, too, come to sticky ends.

A. B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

WESTERN AUSTRALIA

New Railways Act

A provision for Members of Parliament in certain circumstances to attend deputations to the Railways Commission, is contained in the Western Australian Government Railways Amendment Act passed during the last session of Parliament. Under the principal Act any deputation in which a Member took part, or at which he was present, had to go before the Minister and not the Commission.

The new Act allows a Member, if he is in his capacity as a member of a local Authority, or if the Minister has approved of his being present, to attend a deputation to the Railways Commission.

VICTORIA

Diesel-Electric Locomotives

The first of the 26 1,500 h.p. diesel-electric locomotives ordered from the Clyde Engineering Company, of Sydney, has been delivered. The Electro-Motive Division of the General Motors Corporation, U.S.A., is supplying the power units for the locomotives. The Clyde Engineering Company is building the bogies and the locomotive bodies and also installed the power units and accessories.

Named *Harold W. Clapp* after a former Chairman of Railway Commissioners (Sir Harold Clapp was instrumental in introducing the "Spirit of Progress"), the first diesel-electric hauled a special goods train from Enfield, New South Wales, to the Victorian border where, to conform to the break of gauge, it was transferred from 4 ft. 8½ in. to 5 ft. 3 in. bogies. It then hauled a coal train part of the way to Melbourne and a passenger express for the remainder, reaching Melbourne ahead of schedule. The locomotive was thus the first in Australian railway history to haul a load over both the New South Wales and Victorian gauges.

After the naming ceremony at Spencer Street Station, Melbourne, the locomotive, painted blue and gold, hauled a passenger train of sleeping and sitting cars on a non-stop demonstration run to Seymour and return. Passengers included the Premier of Victoria and the Minister for Transport. The new locomotive and two modern sitting cars were subsequently displayed at Spencer Street Station, where they attracted great interest. The locomotive is at present on test hauling fast goods trains between Melbourne and Ararat, and goods trains on the North-Eastern line. When five are delivered, they will haul the "Overland" passenger express and the Inter-state fast goods trains between Melbourne and Serviceton on the South Australian border.

UNITED STATES

Union Pacific Gas Turbine Locomotives

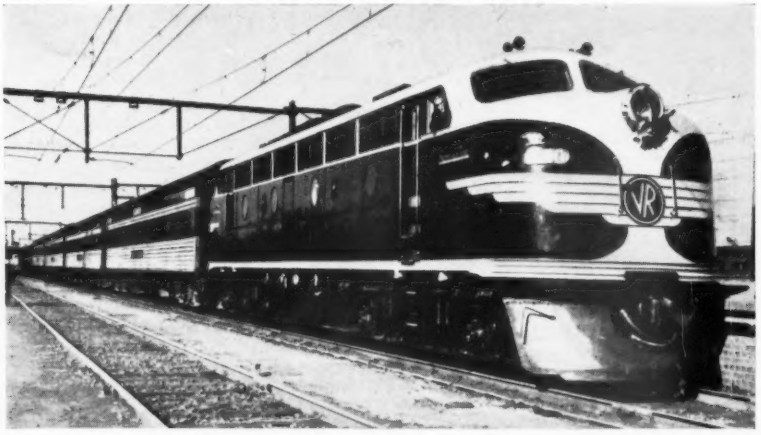
The ten gas-turbine-electric locomotives purchased from the General Electric Company by the Union Pacific Railroad incorporate many modifications of the original G.E. experimental design, prompted by the experience of the railway in running this locomotive over 105,000 miles of its main lines. They include new types of air, intake silencer, fuel nozzles, combustion chamber liners, turbine nozzles and buckets, and exhaust casings; the provision of three-point support for the reduction gear instead of the previous flat mounting; and of a semi-automatic system of control which, with improved cab instruments and gauges, greatly simplifies the handling.

Considerable difficulty was experienced with the experimental locomotive in handling and burning certain types of heavy oil, and much study has been devoted to the improvement of fuel transfer pumps, filters, and piping, although the problem of providing a completely automatic self-cleaning filter which will prevent clogging of the metering pump and fuel nozzles has not yet been satisfactorily solved. The diesel fuel capacity (for the diesel cranking engine and steam generator) has been increased from 745 to 1,000 gal., and the air reservoir capacity (for brakes, control gear, and atomising air for starting the turbine) from 69,400 to 100,000 cu. in. Two motor-driven air compressors have replaced the previous single compressor.

The heavier weight, resulting from these changes, has made it possible to reduce the driving wheel diameter from 42 to 40 in., and this has increased the starting tractive effort from 125,000 to 135,000 lb., and the continuous tractive effort rating from 77,800 lb. at 18·2 m.p.h. to 105,000 lb. at 12·9 m.p.h. Each of these locomotives is supported on an articulated arrangement of four motor-driven four-wheel bogies, and is thus of the Bo-Bo-Bo-Bo type.

Los Angeles Deviation

The Southern Pacific Railroad has intended for some time to build a connecting line to enable freight traffic from its Sunset and Golden State main line to reach the Santa Ana branch without entering the city limits of Los Angeles. The project includes joint use of the Union Pacific main line for 6½ miles between Puente and Whittier Junction, and 8½ miles of new line, together making a new route 15 miles in length, which is expected to cost approximately $4,300,000. The Southern Pacific has now awarded the first contract for the new construction, for earthworks between Whittier Junction and Firestone Boulevard.



New Victorian Railways diesel-electric locomotive "Harold W. Clapp" about to leave Spencer Street Station, Melbourne, on a demonstration run

BRAZIL

Locomotive Deliveries

Six British-built locomotives recently were landed at Recife for the Rede Ferroviario do Nordeste (formerly Great Western of Brazil Railway). Two 1,600-h.p. diesel-electric locomotives, the first of an order for 120, were put into service on the Central Railway of Brazil, and can haul 56-wagon trains carrying 3,800 tons of iron ore for the Volta Redonda Steelworks.

CANADA

Moncton C.T.C. Installation

The Canadian National Railways have called for tenders for extending the present Centralised Traffic Control building at Moncton to increase accommodation for the Communications Department and Divisional operating staff. The new structure will be three storeys high and of fireproof construction.

The present structure was built at the beginning of the last war to house the C.T.C. system in operation between Moncton and Truro, which enabled the C.N.R. to move the large wartime tonnage between Moncton and Halifax and Sydney; a similar installation operates between Halifax and Truro.

When installed, this probably was the largest C.T.C. installation in existence. Since then, C.T.C. has been extended elsewhere, including, on C.N.R. lines, between Ste. Rosalie Junction and Levis, in Quebec, and between Caprool and Oba, in Ontario.

TURKEY

Suburban Electrification in Thrace

Electrification of the suburban section of the Istanbul-Edirne (Adrianople) main line, decided on some considerable time ago, is to be taken in hand shortly, and tenders have been called for.

SYRIA

Damas Hamah & Prolongements Railway

In connection with the negotiations for the sale of the Damas Hamah & Prolongements Company and the Syrian Government for the sale to the Government of the Syrian sections of the system, referred to in the April 4 issue, a commission has been appointed to study the problems arising out of the proposed repurchase of the concession. The commission is to report before the end of this year.

The points to be considered cover also the repurchase of the Lebanese section of the system, the revision of the working conditions, the dismissal of redundant staff, the non-renewal of the agreement concluded by the railway company with the *régie générale*, and the reduction of the working expenditure as well as of other outlays.

SWITZERLAND

New Line to Le Châble

A new standard-gauge electrified line is under construction from Sembrancher, on the Martigny-Orsières line, to Le Châble, in the Val de Bagnes which bifurcates from the Val d'Entremont to the east of Sembrancher. The line will rise from an altitude of 2,350 ft. at Sembrancher to 2,740 ft. at Le Châble.

FRANCE

Talgo Trains

The Talgo Company has authorised the S.N.C.F. to construct a Talgo-type train to be used on the Paris-Hendaye route, which is electrified throughout. It is expected that the train will be ready to go into service by the end of 1953 and will have a maximum speed of 93 m.p.h., enabling the Paris-Hendaye journey to be accomplished in 6 hr. compared with approximately 9 hr. at present. The link at Irun with the Talgo train now operating in Spain will make possible an overall timing between Paris and Madrid of 13 hrs., in comparison with the present timing of 25 hrs. The form of motive power has not been made known.

SWEDEN

Lapland Ore Line

The capacity of the electrified Lapland ore line is fast being increased. This line handles most of the Swedish iron ore traffic, connecting the Kiruna ore fields with the port of Narvik, in northern Norway, which is ice-free all the year, in contrast to the southern terminus of the line, Lulea, on the Bothnian Gulf, which is icebound during the winter. The capacity of the Narvik loading installations was increased by 30 to 40 per cent. in 1951; an additional expansion of 50 to 60 per cent. is in hand and the work is to be completed before the end of the year. The full advantage of this improvement will be derived when the fleet of 1,000 new ore wagons now being provided by the State Railways is in service.

The efforts to increase the capacity of the Lapland line will ultimately allow more iron ore to be exported. In 1951 15,000,000 *tonnes* of ore, valued at kr. 574,000,000, were exported, thus exceeding considerably the forecast made in the September 14, 1951, issue. In the first half of 1952, exports aggregated more than 7,100,000 *tonnes* valued at kr. 377,000,000, compared with 6,000,000 *tonnes* for the same period of 1951.

Publications Received

Famous British Trains. London: The Times Publishing Co. Ltd., Printing House Square, E.C.4. 8½ in. × 5¾ in. 16 pp. Price 1s.—Twelve illustrations of representative British named expresses which originally appeared in *The Times Weekly Review* have been reprinted, with brief descriptive notes, in booklet form. The trains depicted are the "Norfolkman," at Norwich; the "Thames-Clyde Express," in Nithsdale, Dumfriesshire; the "Flying Scotsman," at Newcastle-on-Tyne; the "Golden Arrow," at Folkestone Warren; the "Cornish Riviera," at Burlescombe, Devon; the "Queen of Scots" Pullman, at Durham; the "Tees-Tyne Pullman," at Newcastle-on-Tyne; the "Royal Scot," near Shap, Westmorland; the "St. Mungo," at Dunblane; and the "Torbay Express," near Burlescombe.

Muir-Hill Dumpers.—Salient features of a new model, the "14B," 4½ cu. yd. Muir-Hill dumper, are given in an illustrated brochure, issued by the manufacturer, E. Boydell & Co. Ltd. The model is fitted with a six-cylinder diesel engine, and equipped with the Muir-Hill patent rotating seat and steering. Manœuvrability is good, since the dumper turns in 2½ lengths. Attention has been given to reducing driver fatigue; excellent visibility is provided and the operator faces the direction of travel. The illustrations include driving and front axles, chassis and gearbox, the latter is illustrated by diagram. A capacity table is included, and details of construction and principal dimensions, and of other equipment manufactured appear.

The Railway Modeller.—This monthly magazine, which specialises in small scale railway modelling, has appeared in a new format, with larger pages and a revised layout. The publishers are Peco Publications & Publicity Limited, Seaton, and the magazine costs 1s. 6d.

Activities of the Xylonite Group.—To commemorate its 75 years of activity since the formation of the original company, the Xylonite Group has recently issued an illustrated brochure containing a record of its more recent developments. In 1937 the Company's business was carried on in three factories together with a wholly-owned subsidiary for the manufacture of Xylonite, Bexoid, and Lactoid plastics. In September, 1939, the company linked up with the Distillers Co. Ltd. which became owner of a half-interest in BX Plastics. In 1943 a controlling interest was purchased in the Expanded Rubber Co. Ltd., manufacturers of Rubazote, and Onazote; the firm was also interested in the development of expanded plastics. Further developments took place in 1945 with the lease of a Government factory at Dundee, for the manufacture of Bexoid moulding powder, and polyvinyl chloride in the shape of sheets, extrusions and compounds. The export side of the business to Australia and Canada were already catered for, and in 1948 British Xylonite Incorporated, was founded with offices in New York to look after the Group's export business to the United States. The annual turnover of the Xylonite Group increased from £970,00 in 1937, to £8,200,000 in 1951.

German Review. Published by the German Tourist Information Bureau, Frankfurt/Main (London office: 6, Vigo Street, W.1.). No price stated.—The new (September) issue of this monthly magazine contains, among articles on German activities and attractions, a short description of the amenities of passenger travel over the German Federal Railways.

Coles Electric Hoists.—A series of illustrated leaflets giving brief specifications and dimensions of Coles electric hoists with electric or hand geared travel has been issued by the makers, Steels Engineering Products Limited. The capacity of each type is two, three, and six tons, suitable for a.c. or d.c. supply. Design features, hoisting speed, maximum lift and so on are given in table form, in imperial and metric measurements, with a key diagram of the crab.

East African Rail Link Survey

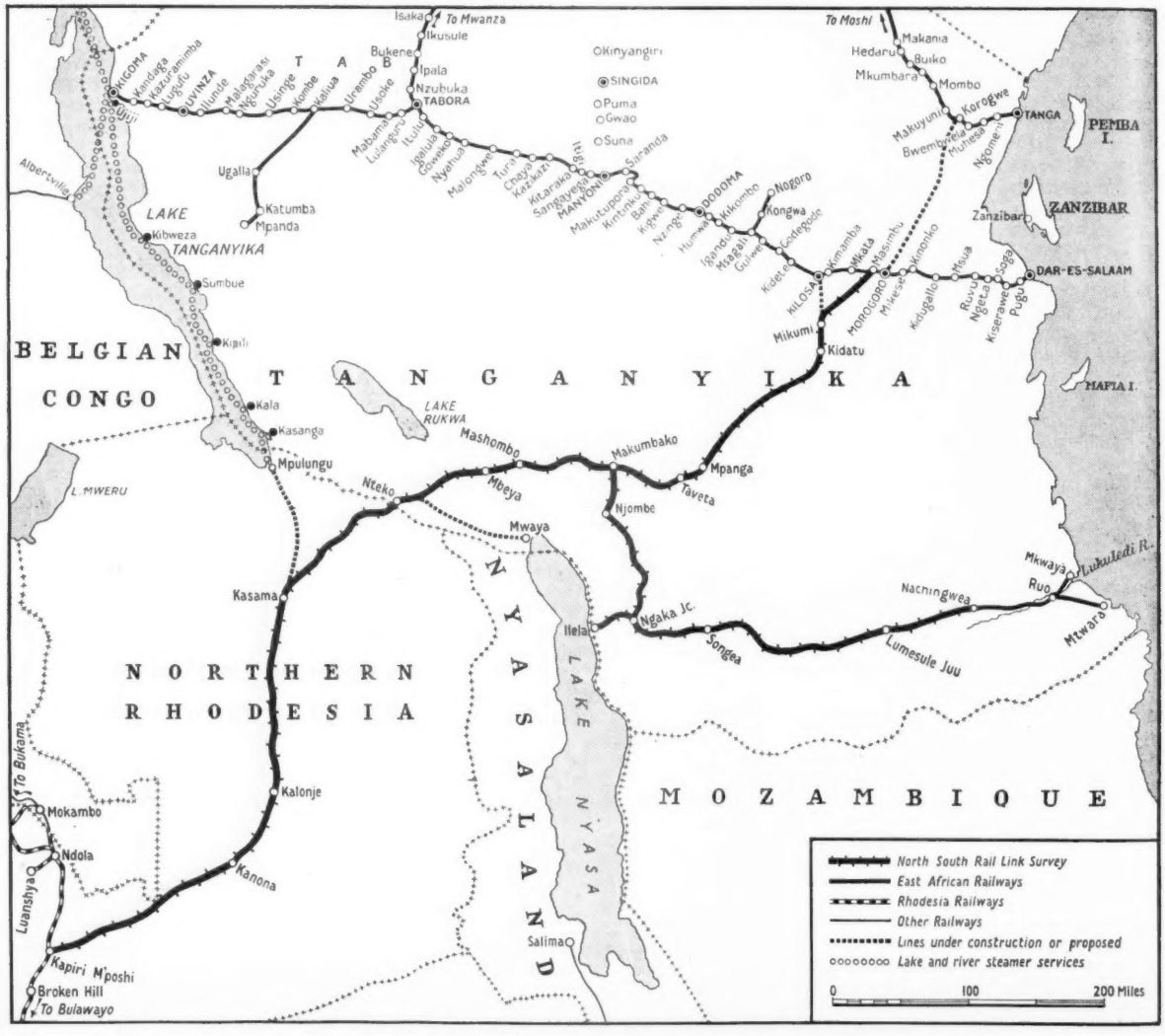
Reports on economic possibilities and engineering problems of scheme to connect the Rhodesia Railways with systems in East Africa

AFTER publication of a report on a preliminary reconnaissance for a railway link between Northern Rhodesia and the East African systems in 1949, discussions began in January, 1950, on the making of a detailed survey of the proposed route. This work was undertaken in the same year, with the aim of completing plans and submitting reports by June, 1952, as recorded in our issues of October 6 and 13, 1950. The two reports concerned were published on Wednesday this week. One of them is a two-volume report by Sir Alexander Gibb & Partners, London, and Overseas Consultants Inc., New York, entitled "A Development Survey for the East African Rail Link," giving an exhaustive examination of possible lines of economic development in the areas traversed by the proposed link and its appendages. The second report, prepared by the East African Railways & Harbours Administration, is entitled "A Report on an Engineering Survey of a Rail Link between the East African and Rhodesian Railway Systems," and deals in detail with construction problems and costs.

The proposed north-south link would run from the Rhodesia Railways at Kapiri Mposhi, near Broken Hill, for some 1,100 miles to a junction with the Central Tanganyika line near Kilosa. There is a proposed extension from Morogoro on the Central Tanganyika line to Korogwe, on the line from Tanga to Moshi, and Arusha, with its link from Kame to the Kenya railway system at Voi. Surveys of the Morogoro-Korogwe line are not yet completed.

With regard to the territory that would be served by the north-south link, the development survey report says that with exception of the mineral zone in south-west Tanganyika, development lies almost entirely in the field of agriculture, fisheries and forestry. In the Northern Rhodesia area there are no districts or rich fertile soils which could be brought quickly into production "and the future of the country must lie in a long-term programme designed to stablise African agriculture. This calls for extensive educational work and the provision of fertilisers at economic prices.

In Tanganyika there are two areas of special promise—the Kilombero



Routes surveyed for railway links between Rhodesia and the systems of East Africa

Valley and the Usangu Plain. Of the two, the former has the advantage of a greater extent and its nearness to markets and centres of consumption. On the other hand, the Usangu Plain has a better climate.

The report proceeds to state in its main conclusion that on the main north-south link there is as yet no evidence of potential mining or industrial development on a scale sufficient of itself to warrant railroad construction purely on economic grounds. It proceeds to discuss the relative possibilities of rail and road transport as a means to economic development, pointing out the changed position today compared with the situation before the advent of the internal-combustion and heavy-duty road vehicle. In those days development, particularly of the remote areas of Africa, stood or fell on the construction of a rail line at minimum cost. As traffic built up over the years, re-alignment and reconstruction to heavier standards became inevitable, often at considerable cost, and this has been the feature in the operation of almost every railway system in Africa. It is therefore suggested that today the correct approach to the problem might well be to allow road transport to carry the burden hitherto borne by the low-cost line, and to postpone rail construction until traffic has begun to build up to such a point that higher standards of rail construction are warranted and their sound economics is assured.

Engineering Features

The north-south line, says the engineering report, would pass through extremely difficult country in the 103-mile section between Mpanga and Makumbako. In the 40-mile Ruaha Mnyera River portion of the route the magnitude of earthworks and bridgework required is much greater than anything normally necessary for a railway line of this nature. A 2 per cent. compensated grade against westbound traffic has had to be used for a distance of 10 miles; elsewhere, the ruling gradients are 1·5 per cent. compensated against westbound traffic and 1 per cent. compensated against eastbound traffic. The whole section would take approximately five years to complete, and construction difficulties make the estimated cost very high, amounting to £5,850,000. Other difficult portions occur on 50 miles of the Mashombo to Nteko section, which is 152 miles in length. The estimated time for completion is five years, at a cost of £6,390,000. Over this part of the route the ruling gradient would be 1·5 per cent. compensated.

The report recalls that plans for the linking of the East African and Rhodesian rail systems have long attracted the East African and Central African Governments, but the plans have not progressed in the past, partly because of the magnitude of the work and the expenditure involved, and partly because the economic case for the construction in whole, or in part, was not assured.

Since the end of the war new life has been infused into the project, and the scheme for a railway link and for a possible outlet through a port at Mtwara in the Southern Province of Tanganyika has been re-examined in relation to colonial development and world needs.

In addition to the eventual extension of the north-south route to link the Tanganyika Central and the Tanga lines and thus complete a rail connection with the Kenya & Uganda system, two branches have been surveyed. The branch from near Kasama to Mpulungu on Lake Tanganyika, 123 miles in length, would traverse difficult country near Abercorn, and curvature would be considerable. Construction is estimated to cost £3,420,000 and to take about three years. A ruling gradient of 1·5 per cent., compensated, is employed for the first 92 miles, and 2 per cent., compensated, thereafter.

A 105-mile branch has also been surveyed from the north-south line near Nteko to the Lake Nyasa shore at Mwaya. This is not expected to be unduly difficult and construction should take about 2½ years. A ruling gradient of 1.5 per cent., compensated, against traffic from the lake terminal has been provided and a grade of 1 per cent., compensated, in the opposite direction.

The East-West Connection

With regard to the proposal for an east-west line joining Makumbako, on the north-south line, to the railway being built inland from the coast at Mtwara, the development survey says there are mineral prospects in the region, development of which may well call for early provision of rail facilities, and it is recommended that an assurance should be given to those concerned with the coal, iron and pulp developments that it is the intention of the Government to link this area to the sea either *via* the Southern Province or the Central line as soon as prospects are sufficiently good to warrant full-scale development of a colliery.

It is considered there are good prospects for agricultural development in the Kilombero Valley and also in the Usangu Plain and the Mbeya area, and it will be for the railway authorities to consider the appropriate economic time at which to construct a line as far as Utengule at the head of the Kilombero Valley.

Finally, the development survey stresses that with the exception of the South-West Tanganyika mineralised area, development must be based almost entirely on agriculture, and those responsible will be wise to consider whether some part of the funds which would be spent on rail construction, equipment, and on bearing initial losses could not better be devoted in the early phases of development to high-grade, all-weather roads; to the promotion of agricultural developments of various kinds; and possibly, in the early stages, to the lowering of road freights by Government assistance.

At present the railway running inland from Mtwara finishes at Nachingwea, but construction of an extension to Lumesule Juu is in progress, using second-hand material. The distance by the route surveyed from Lumesule Juu to Makumbako is 466 miles. On the 289 miles to Ngaka Junction a very considerable amount of earthworks is required and a six-year construction period is considered reasonable. The cost is estimated at £8,965,000. A ruling gradient of 1·5 per cent., compensated, has been provided. Extremely heavy construction work is also involved on most of the 177 miles to Makumbako. For the first 52½ miles a ruling gradient of 1 per cent., compensated, has been provided, but thereafter a grade of 1·5 per cent., compensated, is necessary. It is expected that this section, also, would take six years to complete, and that the cost would be £8,095,000.

The route includes a branch from Ngaka Junction to the Lake Nyasa shore at Ilela, a distance of 47 miles. This has no engineering difficulties of any magnitude but bridgework will be heavy. The ruling gradient is 1 per cent., compensated. Construction should take 18 months at an estimated cost of £1,600,000.

The terms of reference of the engineering report also require a recommendation as to whether all or part of the Tanganyika Central line and the railway from Mtwara to Nachingwea should be converted from metre to 3 ft. 6 in. gauge. It is not considered, however, that any recommendation can be made on this point until a decision is reached on construction of the complete link from Rhodesia to the railway systems of East Africa.

Preparation of Engineering Report

The routes surveyed covered 1,867 miles. Very full and detailed estimates of costs were produced, together with abstracts of physical details and a map and a longitudinal profile for each section of the lines. Field work, which was conducted under the direction of Mr. T. Davidson and Mr. P. M. Anderson, of the East African Railways & Harbours Administration, began in June, 1950, and was completed by October, 1951, when the survey headquarters were transferred to Gilgil, 80 miles from Nairobi, where the plans, quantities, estimates and report were finalised in May this year.

In general, the engineering survey proved the possibility of constructing railways over all the routes named. As much of the line through Tanganyika passes through difficult country necessitating heavy earthworks and bridgework, the total estimated cost is high, amounting to about £33,000,000 for a line from the Rhodesia Railways to the Tanganyika Central line, and to about £18,000,000 for the link from Nachingwea to the north-south line. The estimates are based on January, 1952, prices, using new 60-lb. permanent way material at £10,000 per mile. The report makes it clear that the construction on the standards adopted would take many years to complete.

Arc Suppression in Mercury Arc Rectifiers

Systems for the automatic application of grid bias in case of backfire

(From a correspondent)

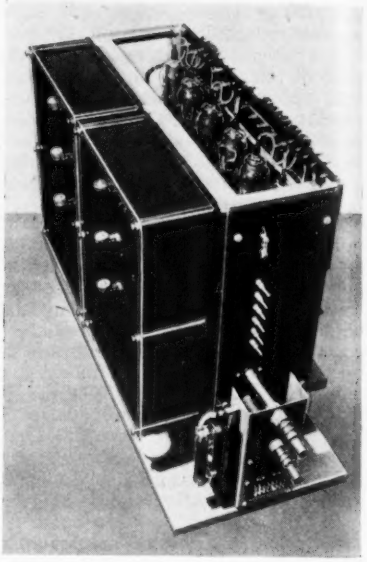
ALTHOUGH it is generally agreed that from almost every point of view the mercury-arc rectifier is superior to the rotary converter, there are differing opinions among engineers concerned with electric traction as to the best type of rectifier. It seems obvious, however, from a survey of recently published opinions, that although engineers are inclined to make definite statements about the type of rectifier that they individually have found most satisfactory, up to the present widely differing applications have been met by types ranging from the pumpless glass bulb rectifier to the pumped steel tank type with various forms of grid control. Air-cooling is replacing water cooling in the pumped as well as the pumpless type.

An interesting feature of the rectifier with energised grids is that of arc suppression. By this means a back-fire, which entails a short-circuit across the transformer secondary winding, can be cleared in the rectifier itself without the operation of the associated oil circuit-breaker. It has been stated by Mr. C. M. Cock that on the Southern Region of British Railways a backfire occurring in a rectifier without energised grids is cleared in about 16 cycles by the rectifier oil circuit-breaker, entailing shut-down and a re-start. In a rectifier with energised grids, on the other hand, a backfire is suppressed in 3 or 4 cycles with no oil circuit-breaker operation, no consequential re-start and a supply interruption of only a few cycles duration.

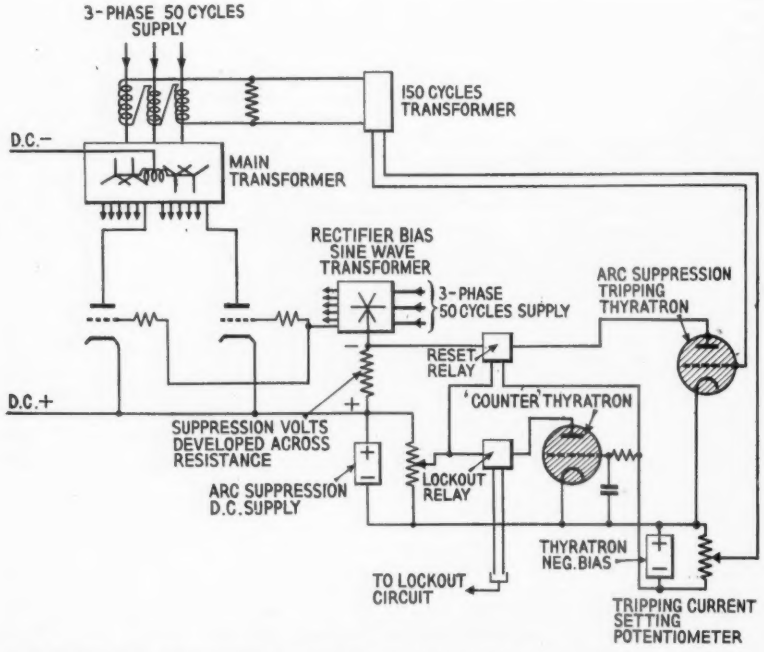
It has been found, however, on the Southern Region and British Railways generally, that the pumpless type of rectifier is far less prone to backfire in service than the pumped variety. This mainly accounts for its popularity on British Railways and experience with the air-cooled (pumpless) type of rectifier is considered to have shown that neither grids nor arc suppression devices are necessary.

The opposite opinion has been expressed by Mr. A. J. G. Gosling, Electrical Engineer, South African Railways, who has stated that in the experience of his administration all 3,000-volt rectifiers backfired. He mentioned further that the opinion of the S.A.R. has not been influenced by the use of rectifiers as invertors.

There are two main methods of arc suppression, depending on whether or not the grids are normally energised and a number of variations of these is employed. In the first method the grid potential "floats," and takes up the potential of the surrounding arc. When a fault occurs all the grids are given a negative potential which interrupts the normal commutation of the arc from anode to anode. In the second method, positive impulses are applied to each grid in turn, so igniting the arc at each corresponding anode. These are termed liberating potentials and in turn they overcome a permanent negative grid bias. When a fault occurs the positive impulses are no longer applied to the grids.



G.E.C. arc suppression unit, showing on left push-buttons for testing operation of the equipment



Electronic arc suppression circuit as used with G.E.C. rectifiers installed in Netherlands Railways substations

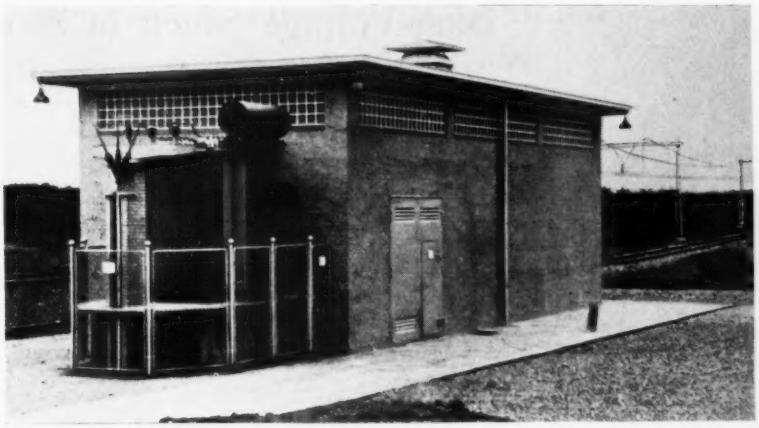
Both methods have been used on the South African Railways. In the Reef substations, various methods of arc suppression are employed depending on the method of firing of the anodes. In one of the makes of equipment employed the grids were normally unenergised and only in the event of backfire was a negative potential applied to them. Apparently this system gave rise to erratic firing and it was modified so that grids are now normally given a slight positive charge, with the negative bias applied in the event of backfire. In another make of equipment the grids are normally maintained at a negative potential relative to the cathode and the anode firing is controlled by superimposing successive sine-wave voltages on each grid in turn, so making them periodically positive relative to the cathode. In the event of backfire a high-speed relay reduces and then interrupts the positive potential applied to the grids.

In the Natal substations, the grids are normally negative with respect to the cathode and receive positive impulses

in turn, causing commutation. These positive impulses are regulated by a rotary contact-maker driven by a synchronous motor, and in the event of backfire the circuit to the rotary contact-maker is interrupted by a high-speed relay. The relay is operated by two current transformers, each having two primary windings connected in two anode leads 180 deg. apart.

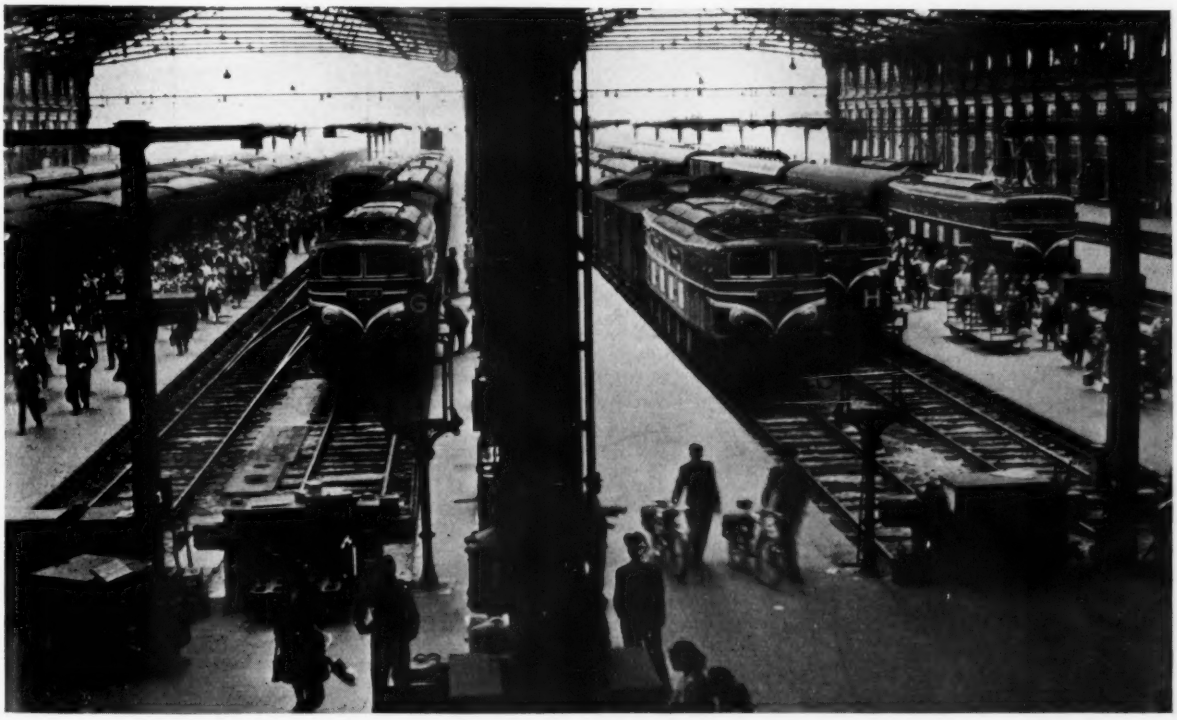
Rectifiers recently installed in substations of the Netherlands Railways by the General Electric Co. Ltd., are of the air-cooled steel tank pumpless type incorporating control grids for arc suppression. Commutation is produced by providing for each of the six grids a sinusoidal bias, the supply being obtained from a 6-phase auxiliary transformer, and each positive half-cycle coinciding with the conducting period of the corresponding anode. Arc suppression is effected by introducing an excess negative bias from a metal-oxide rectifier.

The application of the excess negative bias is made nearly instantaneous by the G.E.C. triple-frequency tripping principle. In this system, a 150-cycle signal obtained from a current transformer in the a.c. supply, is increased in the event of fault or excessive overload to actuate the grids of "biased off" thyratrons. These, on being released, cause the excess negative bias to be applied to the control grids. The diagram on the opposite page shows the arrangement of the electronic arc suppression circuit in the twin-cylinder rectifier equipment supplied to the Netherlands Railways. The 150-cycle signal will operate during either half wave so that the maximum delay to the application of arc suppression in terms of the 50-cycle supply is $\frac{1}{6}$ cycle. A lockout relay is incorporated in such a fashion as to ensure a locking out of the rectifier in the event of the arc suppression circuit being called upon to operate a number of times in quick succession. A time delay unit is included to allow for the time necessary to heat up the thyratrons, this delay unit preventing the operation of the auto-reclose relay until a suitable time has elapsed.



Netherlands Railways substation at Ryssen equipped with mercury-arc rectifiers incorporating electronic arc-suppression equipment

Paris-Lyons Electrification, S.N.C.F.



Trains in the arrival platforms at the Gare de Lyon, Paris, headed by the latest class of 2-Do-2 locomotives designed for Paris-Lyons services Photo.] [L. Viguier

Dual-Voltage Stock in Switzerland

Motors run at half-speed on lower-voltage section, which uses tramway tracks within the city of Berne

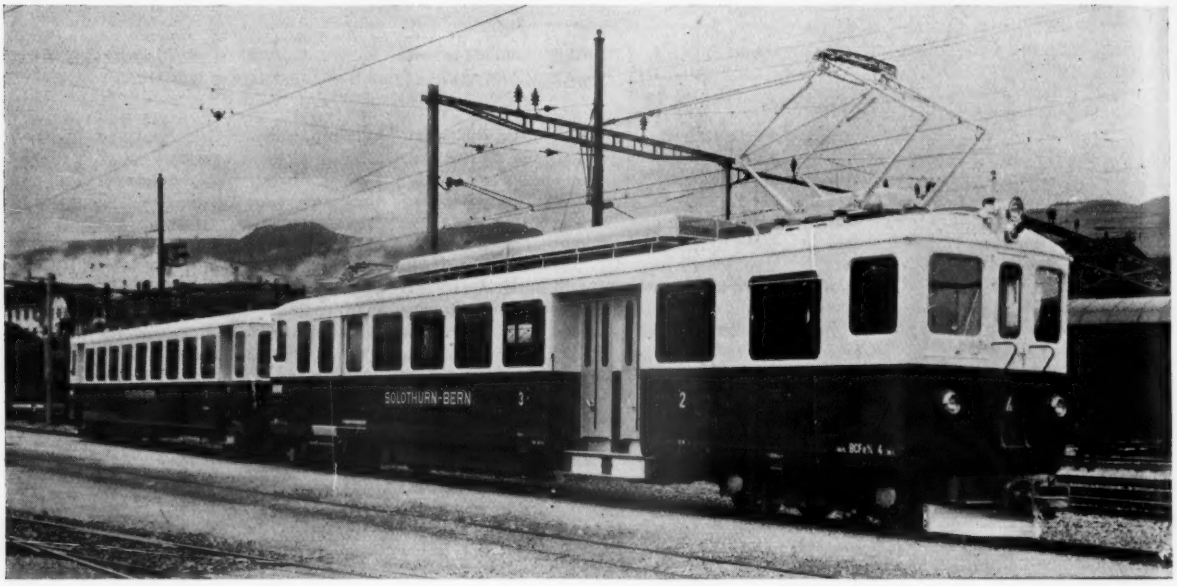
THREE motor coaches and three driving trailers placed in service recently by the Solothurn-Berne Railway, Switzerland, have Oerlikon electrical equipment suitable for operation on alternative voltages. Different sections of the system are electrified at 1,200 V., 850 V., and 600 V., but the 850 V. section is expected to be raised to 1,200 V. in the near future. The traction motors are wound for 600 V. and are connected four in series or as two series pairs in parallel. In the latter connection, therefore, they run at half speed on the 600 V. section, but as this part of the system uses tramway tracks inside the city of Berne, the lower top speed is actually an advantage.

Train units are made up of a motor coach and driving trailer, with provision for adding intermediate vehicles. The four self-ventilated motors of each motor coach are rated at 180 h.p. (1 hr.). Control is by electropneumatic contactors, with 15 series, 12 parallel, and 15 braking notches, and bridge transition. The electric braking is rheostatic, using chromium-nickel strip resistors mounted on the roof and cooled by natural draught.

The control circuits operate at 36 V., and a 100 A.hr. battery of this voltage, charged from a 750 W. motor-generator, supplies the lighting. Heating normally is at 1,200 V., but on lower-voltage sections additional elements on a separate circuit are switched in to maintain the temperature.

Provision for normal-speed operation of the compressor motor on any supply is made by means of a changeover relay which on the lower voltages short-circuits a series resistance. Fast and slow speeds are provided by means of a field tap. The compressor supplies air for pantograph operation, control, and braking. An apparatus cubicle in the luggage compartment houses the main electropneumatic high-speed circuit-breaker, motor-isolating switch, changeover relay for the compressor motor, and electromagnetic contactor for control of the additional heating on low-voltage sections.

Maximum speed is 46·6 m.p.h. With a train made up to 140 *tonnes* (each motor coach weighing 34 *tonnes* in running order), a speed of 25½ m.p.h. can be attained on a gradient of 1 in 33. Three of the older motor coaches on the same railway are to be modernised and equipped with new electrical equipment of the type described.



Motor coach and trailer for operation on sections of the Solothurn-Berne system electrified at three different voltages

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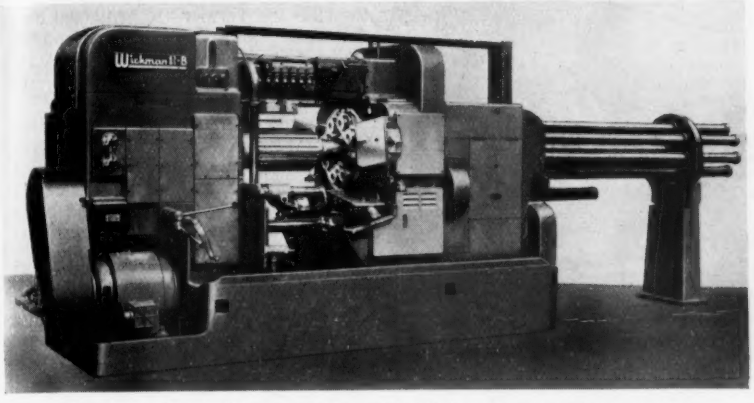
REPORT ON U.S.A. ELECTRIFICATION.—A study has been completed at the Battelle Memorial Institute, Columbus, Ohio, of the prospects for further railway electrification in the United States. The conclusion is reached that the financial problem, at present constituting the greatest obstacle, could be reduced by adopting a high-voltage system. This, it is suggested, should take the form of a 24,000 V. single-phase a.c. supply at 60 cycles in the contact line, feeding locomotives using motors and control gear common with the equipment of existing diesel-electric types. It is claimed that a 400-mile main line could be electrified in this manner for an investment 10 per cent. less than would be required for a 3,000 V. d.c. conversion. Among the subjects recommended for research is the reduction of the capital and operating costs of ignitron rectifier and motor-generator locomotives.

PROTOTYPE BO-BO LOCOMOTIVES FOR GERMANY—Five Bo-Bo locomotives are under construction for the German Federal Railway to provide operating experience on which a new mixed traffic class, "E.10," will be based. The basic design weighs 82 tons, measures 52 ft. 6 in. in length, and has a 1-hr. rating of 4,290 h.p. Specified performances are a maximum speed of 80 m.p.h., 44 m.p.h. continuously with a 1,300 ton goods train up 1 in 200 and 56 m.p.h. with a passenger train of 700 tons up 1 in 100. All five prototypes differ in mechanical and electrical details. Alternative types of flexible and resilient transmissions to be compared include a carbon shaft drive. Three new types of traction motors have been developed for these locomotives. Some of the machines will have control on the high-tension, and others on the low-tension side of the transformer. Various methods of transformer lamination will be incorporated in the prototypes for comparative purposes. In one locomotive there will be a spring linkage between the bogies.

International Machine Tool Exhibition at Olympia—3*

Display of multi-spindle automatics, precision lathes, heat treatment plant, horizontal borers and welding equipment



Wickman 8-spindle automatic, with 1¾ in. diameter bar capacity

A SERIES of multi-spindle automatics is included in the exhibits of Wickman Limited, together with a range of carbide tool grinding machines. The display includes recently introduced four and six spindle automatics, and a new automatic in the eight spindle range. This latter machine has a bar capacity of 1¾ in. and incorporates the Wickman auto-setting mechanisms which effect alterations to tool feed strokes and bar feed without cam changing.

New features extend the scope of application, and the design allows for bar feeding in two stations, and double indexing of the spindle drum if required; by these means two dissimilar components can be produced at each indexing. A range of 24 spindle speeds from 96 to 1,243 r.p.m., and 50 feed gear combinations, provide an almost infinite range of cycle times. The standard bar feed length is 5 in.; this can be increased to 10 in. by the provision of a special bar feed cam. Maximum turning length is 9 in.

Thomas Ryder & Son Ltd., the sole selling agent for whom are Wickman Limited, are exhibiting a No. 8 Vertical-auto, a No. 18 Rydermatic and a universal machine which incorporates a 6½ in. centre lathe, a 40 in. by 10 in. milling machine, a 24 in. drilling machine, and a 10 in. grinding machine. The No. 18 Rydermatic is designed for heavy high-speed cutting with Wimet and other tungsten carbide-tipped tools. The Ryder Universal is designed for general purpose work and is specially suitable where there is a lack of floor space.

Both the lathe and milling machine are powered by the same 6 h.p. motor. The drive is transmitted by vee-belts to a common shaft from which the drive separates by multi-plate clutches, to the lathe and milling machine spindles through nine speed gear trains. The lathe spindle and both the vertical and horizontal of the milling machines are all mounted on identical taper roller bearings; each spindle has a reverse gear and a brake.

Stopping and starting is by lever operated clutches. The lathe admits 30 in. between centres, and the gap bed allows a swing of 10½ in. Nine spindle speeds are available from 21 to 533 r.p.m. Twelve feeds are available ranging from 0·0056 in. to 0·391 in. per revolution sliding, and 0.0028 in. to 0.0195 in. per revolution surfacing.

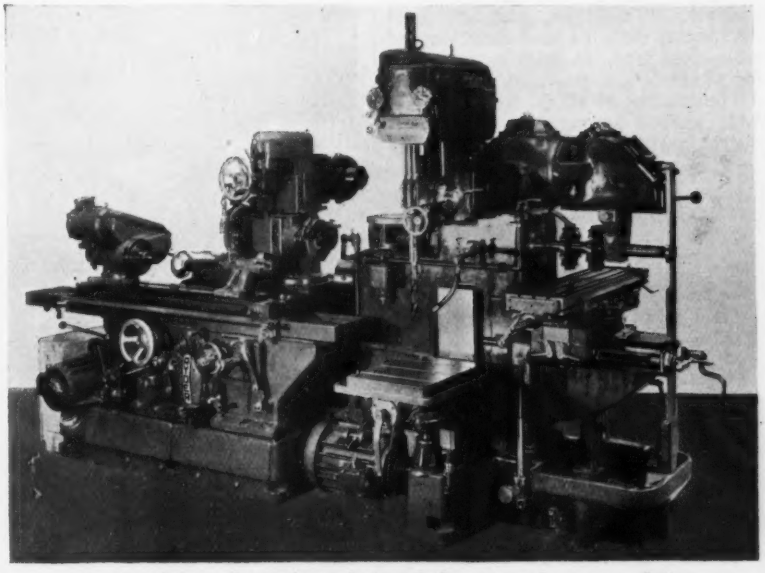
The universal milling machine has both a vertical and horizontal spindle. The vertical spindle is mounted in a swivel head that can move through any angle and permits a wide variety of angular milling operations. A feature of the head is that it carries the support for the horizontal arbor. The table has a traverse of 23 in. longitudinal, 7 in. traverse, and 13 in. vertical. Four feeds ranging from ¼ in. to 10 in. per min. are provided; the knee of the milling machine is manufactured by Adcock & Shipley Limited.

The sensitive drilling machine is separately driven by its own 2 h.p. motor. Changes of speed or feed are obtained through sliding gears; hand or automatic feed can be used. The maximum capacity is 1¼ in. drill. The universal grinding machine is suitable for surface grinding, and internal and external cylindrical grinding; a swivel table provides for taper grinding.

A 2 h.p. motor drives the table through a gearbox and clutch. The gearbox is supported on a rubber mounting and is coupled to the grinder by a flexible coupling. The wheelhead and workhead are self-contained units, driven by 3 h.p. and ¼ h.p. motors respectively. Both heads are made by the Churchill Machine Tool Co. Ltd. Design is such that the lathe and grinder cannot be operated at the same time. The switch gear is manufactured by Allen West & Co. Ltd., and is contained in a separate compartment, while the wiring is by Pyrotenax Limited.

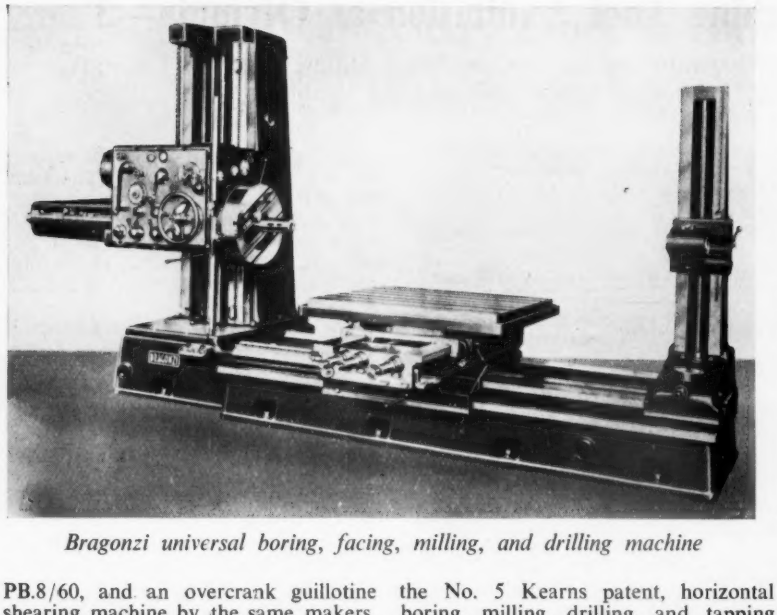
Horizontal Boring Machines

A series of different types of machine tools is exhibited by Thos. W. Ward Limited. The exhibits include a Bragonzi universal horizontal boring, facing, milling and drilling machine, a Riva universal milling machine model U.8, a Riva vertical milling machine model V.20, an Eldair power press brake, model



Ryder Universal machine designed for general-purpose duties

* Part 1 appeared in our issue of September 19, and Part 2 in the September 26 issue



Bragonzi universal boring, facing, milling, and drilling machine

PB.8/60, and an overcrank guillotine shearing machine by the same makers.

The Bragonzi horizontal borer has a spindle diameter of 4 in. while the feed at one setting is 30 in. and at two settings 46 in. while the feed at one setting is 30 in. and at two settings 46 in. The facing head is 24 in. diameter, and will face up to 31 in., while the maximum distance from the facing head to outer steady, and distances, centre of spindle to the table is 9 ft. 7 in. and 46 in. respectively; the working surface of the revolving table is 4 ft. 3½ in. × 3 ft. 7½ in. A preselector gearbox provides nine spindle speeds from 80 to 800 r.p.m. and nine facing head speeds from 6 to 60 r.p.m.

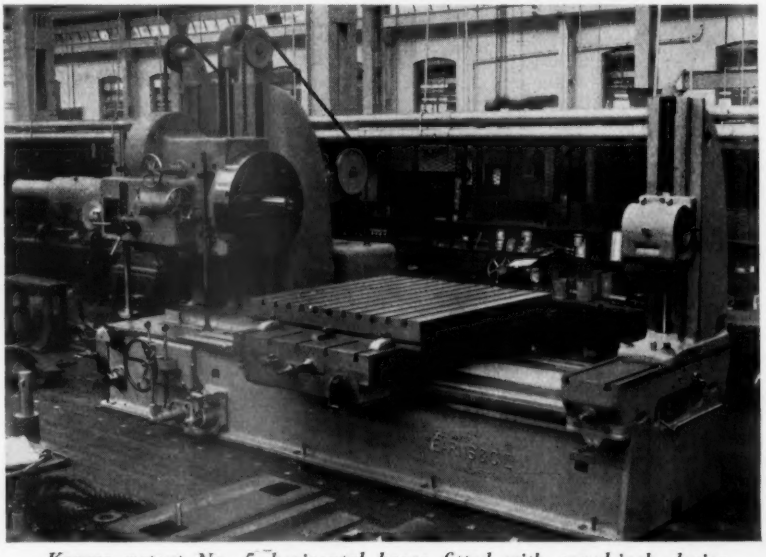
The feed selection is of the dial type and provides 12 feeds 42 to 500 mm. per min., and 12 feeds, 0·05 to 0·6 mm. per revolution; threads from two to 24 threads per in. can be cut. Rapid traverse is supplied to all feeds; vernier scales to all traverses, with additional micrometer dials for head elevation and table cross feed. A built-in taper boring attachment is provided.

The exhibits of H. W. Kearns & Co. Ltd., include among others the optimetric, horizontal tool room borer, and the No. 5 Kearns patent, horizontal boring, milling, drilling, and tapping machine. The optimetric machine incorporates the Kearns patent, optical measuring system to the vertical and transverse motions. Settings to 0·001 in. can be made with an error of not more than 0·00025 in.

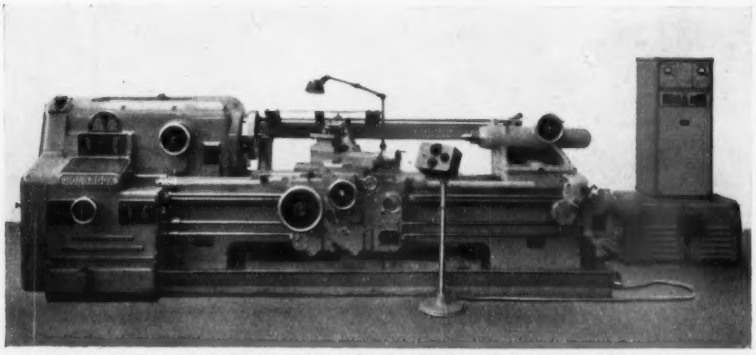
An illuminated screen 4 in. × 1½ in. is extremely easy to read, and as both the rule and vernier are projected on to the same side of the screen, parallel errors are impossible. The measuring system is built into the machine, thus reducing the possibility of errors.

A feature of the No. 5 Kearns patent, horizontal borer is the patented crawl inch arrangement to the compound motion of the tables, and vertical adjustment of the spindle slide and boring stay. A 7½-h.p. independent rapid traverse motor provides three rates of movement.

The first movement is the normal rapid traverse which is entirely independent of the feed motion Secondly the crawling rate which enables the table or spindle slide to slowly approach its final position, and lastly a single impulse movement to any of the traverses of approximately 0·002 in. A single lever operating through a gate controls the forward and reverse directions to the



Kearns patent No. 5 horizontal borer fitted with crawl-inch device



Model "A" 27-30 Holbrook toolroom lathe, with Metropolitan-Vickers electronic profile equipment

three movements, and also the electric braking and engagement of the automatic feeds.

Toolroom Lathes

The Holbrook Machine Tool Co. Ltd. are showing five different designs of toolroom lathes among which is included model "A" 27-30, which has a swing over bed of 30 in. and takes 72 in. between centres. The headstock has 24 hydraulically operated dial speed changes forward and reverse, from 3½ to 700 r.p.m.; all gears are hardened and ground on the tooth profile.

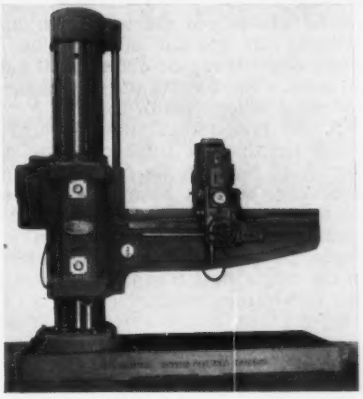
The lathe is designed as a standard machine with internal slide and taper turning equipment, but may also be supplied with alternative features. The

lathe exhibited has no internal slide or taper turning equipment, but has power feed to the topslide hand and is equipped with Metropolitan-Vickers electronic profile equipment.

A quick change gearbox provides 80 totally enclosed direct changes obtained through dial control, ranging from one to 30 t.p.i., and a feed range of 0·003 in. to 1·5 in.; all gears are accurately shaved. The headstock is fully equipped with anti-friction bearings to reduce the internal load to a minimum. The forged spindle has two opposed precision taper roller bearings in front, which are pre-loaded and control end thrust in either direction. Two parallel roller bearings support the middle and rear end of the spindle.

A heavy-duty high-speed cold saw is exhibited by Clifton & Baird Limited. The machine on view is the smallest of a new range of cold metal sawing machines accommodating segmental type saw blades from 14 in. to 18 in. dia. When fitted with an 18 in. diameter saw blade the machine has a maximum capacity of sections 5½ in. dia. round, 5¼ in. square, or structural sections up to 10 in. × 5½ in. with the web vertical.

Three cutting speeds to the saw blade are provided, giving 30, 44, and 66 ft. a minute peripheral speed, suitable for cutting all classes of steel; a single lever ensures that one speed only can be engaged. The drive is through vee-belts from a constant speed 5 h.p. motor, mounted on the saw saddle, through hard steel, speed change gears, nickel-chrome steel worm and phosphor-bronze worm wheel, the final drive being double helical to ensure silent running.



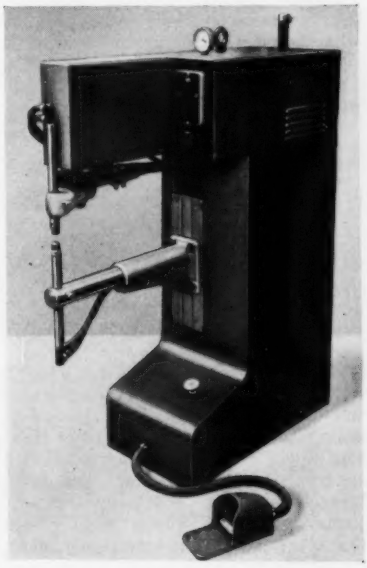
Asquith "O.D.4" radial drill, with inching rotation of the spindle

The saw spindle and pinion shaft run a amply proportioned gunmetal split bearings. All other shafts on the saw saddle are mounted on British Timken taper roller bearings. A hydraulic pump and control valves give a balanced feed infinitely variable up to 25 in. per minute. Adjustable tappets: Automatically return the saw saddle on completion of the cutting stroke.

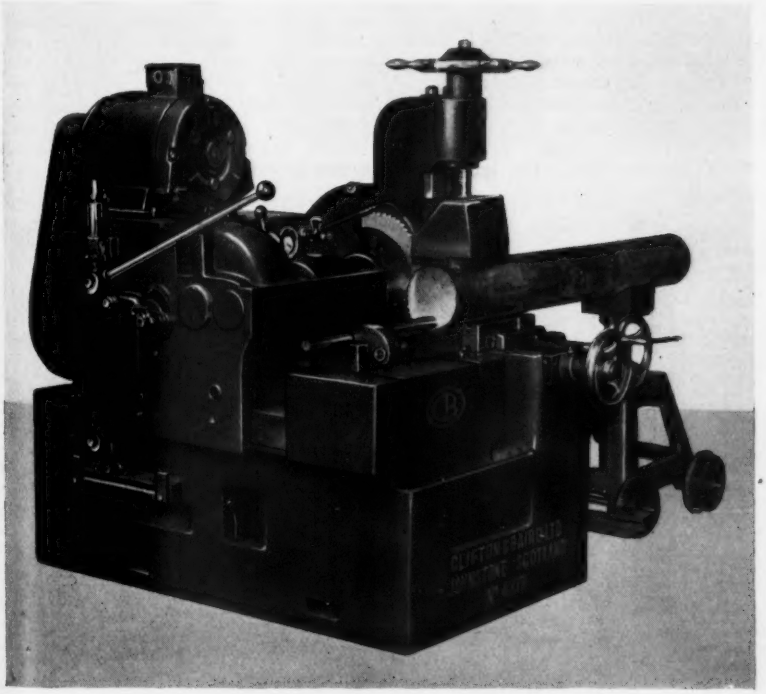
The exhibits of William Asquith Limited include radial, vertical and horizontal drilling and boring machines, an electronic cam milling machine, a rotary milling machine and so on. The latest addition to their "OD" range of radial drilling machines is the "O.D.4." The machine can be supplied as standard with 18 spindle speeds and nine spindle feeds. Three alternative speed ranges are available to suit customers' requirements.

As an extra feature when required, three leads for threads between six and 40 threads per inch can be provided by means of change wheels used in conjunction with the feed box, in addition to the nine drilling feeds. The spindle is mounted upon an Asquith arrangement of precision pre-loaded ball and roller bearings, which permits of a high spindle speed to be used and ensures absolute rigidity.

The 18 mechanical changes of speed are obtained by a lever moving in a gate path fitted in the left-hand side of the slide, operating in conjunction with a 3-change lever. The alternate speed ranges are 1,550-19; 1,100-14, and 755-9½ r.p.m. A direct reading speed index plate clearly shows the lever positions for the required speeds. Rapid power traverse to the slide along the arm can be provided as an extra. The spindle is driven by a 15 h.p. reversing motor, flange-mounted vertically on top of the slide. Inching of spindle rotation is provided by means of a push button on the master switch.



Philips type E1201 fully automatic spot welder



Clifton & Baird heavy-duty cold saw

The Newall Group of Companies, comprising the Newall Engineering Co. Ltd.; Optical Measuring Tools Limited; and Keighley Grinders (M.T.) Limited, are showing some 60 optical instruments covering a wide range of application. A new machine exhibited for the first time is the 30 in. optical rotary projection table which is capable of reading to one second of arc. Also exhibited is a wide range of machine tools including jig borers, universal grinders, internal and face grinders, plain grinders, lappers and so on.

A comprehensive display of industrial

electrical equipment is provided by Philips Electrical Limited, whose exhibits include magnetic filters, welding equipment, industrial rectifiers and electronic instruments. Included in the welding equipment is a new Philips 50 kVA air-operated single and repeat resistance spot welder type E1201, designed for spot welding heavier gauges of sheet metal up to $\frac{5}{16}$ in. thick mild steel.

New features are embodied in the design which include the grouping of all controls, including the electronic control of the welding time (5 cycles in 10 seconds in two stages), a pilot light indicating duration of welding time, a heat output control switch and so on. Welding spots up to 100 a minute can be achieved; single or repeat spot welding is optional. The welding head is air-operated and being of the double-acting type, a pressure of 1,000 lb. tip force can be exerted.

Industrial Heating Furnaces

Due to the nature of their products the Incandescent Heat Co. Ltd. and other associated companies are confining their exhibits to models of various types of equipment. The exhibits include a producer gas fired balanced hearth walking beam furnace. The model is motorised, and with the beams actuated the method of operation is easily understood; the output is 10 tons an hour. The furnace can be designed for using other types of fuel.

A gas fired radiant tube refractory roller hearth fired furnace having an output of one ton an hour used for annealing, vitreous enamelling and so on is also on view. Included with this model is a gas conditioning plant for producing protective atmospheres used in the bright heat treatment of ferrous and non-ferrous metals. The output is 5,000 cu. ft. of conditioned gas an hour; the unit can be supplied in various sizes from 500 to 10,000 cu. ft. an hour.

A model is exhibited of a complete heat treatment installation comprising town gas recuperative furnaces, mechanised quench tanks, and cooling racks, the temperatures of the furnaces and quenching media is automatically controlled and recorded by individual control panels. A feature of this particular model is that it is fully mechanised. By pressing a button the sequence of operations is carried out continuously, which includes furnace door opening, the charging and discharging, the charging machine moving along its track to the quench tank, and ultimately discharging the work to the cooling rack.

Miscellaneous Exhibits

The Sheffield Twist Drill & Steel Co. Ltd. is exhibiting a large range of Dormer tools including high-speed twist drills of various types and sizes. The drills include metric sizes up to 20 mm. and a fractional inch range up to $\frac{1}{2}$ in. diameter. High speed steel drills for right- and left-hand cutting up from $\frac{1}{32}$ in. to $1\frac{1}{2}$ in diameter for portable drilling machines and automatics for drilling austentic stainless steels, also straight and taper shank drills and so on.

The firm will also have on view various types of hand and machine reamers with straight and spiral flutes, slot-drills, steel reamers, woodruff cutters, hollow mills, and so on.

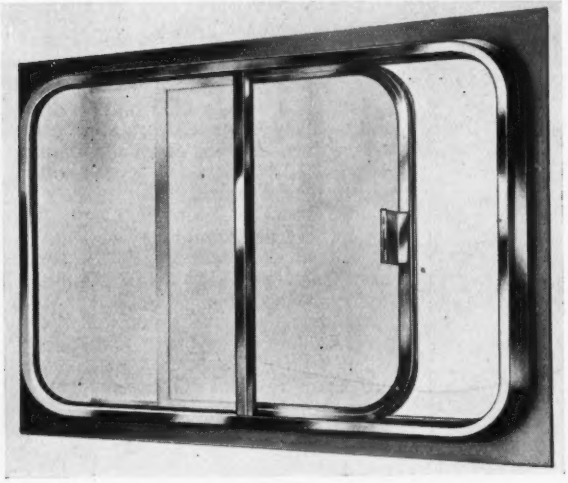
The Dormer range of high-speed end mills is complete with straight, tapped and tanged taper shanks, shell end mills and arbors, and includes the recently introduced Helicut series with its specially designed holder affording positive drive and a minimum of overhang from the face of the machine spindle.

(Concluded)

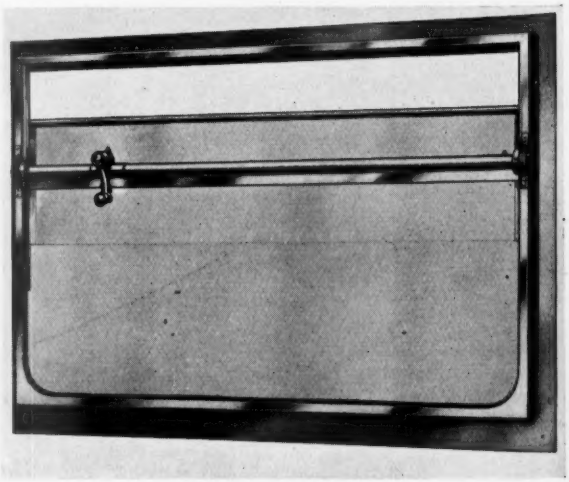
Rolling Stock Windows

New designs for passenger transport vehicles

THE firm of Hallam, Sleigh & Cheston Limited has recently evolved several new designs of winding windows for rolling stock and road passenger transport vehicles which are an addition to the company's windows of basic design Several of the new designs are being displayed at the Commercial Motor Transport Exhibition now being held at Earls Court, including the Ace Hylevel, half-drop window, the Soma II full depth sliding window, and the Alex II improved full-drop window. The first type provides maximum ventilation, and at the same time provides an unobstructed view, while the Soma type can be locked in any position to suit passengers' requirements. The latter type is a balanced full-drop window requiring only minimum space for the mechanism. The firm is also exhibiting the Briway MB. II M Pedestal, adjustable driver's seat which provides rapid adjustment while its driver is in position. Horizontal, vertical, reclining, and rotating movements are all combined in the design.



Soma II full depth sliding window



Ace Hylevel half-drop window

RAILWAY NEWS SECTION

PERSONAL

Mr. Alex Lyle, Assistant to the Vice-President, Canadian Pacific Railway, has been appointed Assistant Vice-President.

Mr. C. T. Brunner, M.Inst.T., who took office on October 1 as President of the Institute of Transport for 1952-53, is a Director and General Manager of Shell-Mex & B.P. Limited. He was educated at the Nottingham High School and Manchester University and started his business career with the Metropolitan Railway. In 1926 he joined Shell-Mex Limited, and in 1927 formed the company's Statistical Department (now Trade Relations Department), continuing to be its manager after the formation of Shell-Mex & B.P. Limited in 1932. During the war he was Secretary of the Management Committee of the Petroleum Board and Manager of the Board's Secretariat. From January, 1947, until the end of June, 1948, when the Board was dissolved, he was its Acting Secretary. He was appointed an Assistant General Manager of Shell-Mex & B.P. Limited in 1947, and since 1950 has been a Director and General Manager of the company. Mr. Brunner became a member of the Institute of Transport in 1922 as a Graduate, and was awarded the Graduate Silver Medal in 1927. He was elected to Membership in 1938 and in the same year was awarded the Road Transport Medal. He was elected a Member of the Council in 1944 and held office until 1947, serving on the Executive, Library, and General Purposes Committees. He was Honorary Librarian from 1947 to 1950 and during that period was Chairman of the Journal and Library Committee, and a Member of the General Purposes Committee. He has been a Vice-President since 1950, serving on the General Purposes Committee. In December last he gave the Institute's 1951 Henry Spurrier Memorial Lecture. Mr. Brunner is a leading authority on the economics of transport, and in parcular is the author of several books and technical papers on road transport. As a member of the Management Committee of the British Road Federation he has taken a leading part in the Federation's work in the interests of roads and road transport. He is also a member of the Grand Council of the Federation of British Industries, and Chairman of the Road Transport Panel of its Transport Users Policy Committee.

Mr. C. T. Brunner
President of the Institute of Transport for 1952-53

Mr. N. C. Kapoor
Appointed Chief Operating Superintendent, Eastern Railway, India

Mr. A. Campbell, Chief Mechanical Engineer, and Mr. W. Fairley, Deputy Chief Civil Engineer, Crown Agents for the Colonies, are proceeding to West Africa early this month. During the course of their tour they will visit Nigeria, Gold Coast and Sierra Leone, and will discuss engineering matters in general and problems of supply. They hope to visit the railways, harbours and other important public works undertakings.

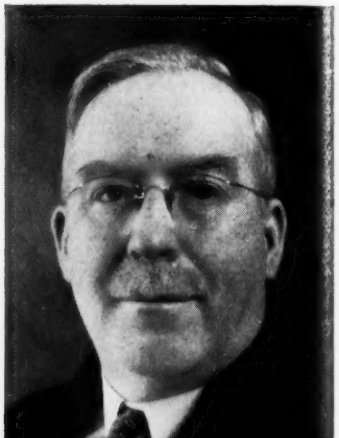
Mr. N. C. Kapoor, B.Sc., Chief Operating Superintendent, East Indian Railway, who, as recorded in our May 23 issue, has been appointed Chief Operating Superintendent, Eastern Railway, India, was born in 1902. He was educated at the St. John's College, Agra, and after graduating as Bachelor of Science, took up an appointment on the college staff. Simultaneously, he studied law and for M.Sc. at Agra College, but before completing these courses, took an examination for the railway service. He joined the former Eastern Bengal Railway in January, 1926, as a probationary officer. He was appointed as Assistant Traffic Superintendent and within a few months was selected to officiate in the senior scale. In 1937 he was transferred to the East Indian Railway, where he served as a Senior Scale Officer in various divisions, including the head office, and was promoted as Deputy Chief Operating Superintendent (Coaching) in 1942. Between 1942-48 he occupied the posts of Deputy Chief Operating Superintendent (Goods); Deputy Chief Commercial Manager; Divisional Superintendent, Allahabad; Divisional Superintendent, Moradabad; Divisional Transportation Superintendent, Dhanbad; and Divisional Superintendent, Asansol. In June, 1948, he became Traffic Manager, Oudh Tirhut Railway, and at the end of that year was promoted as Chief Commercial Manager, East Indian Railway. Mr.

Mr. J. A. Cussons

Appointed System Manager, East London, South African Railways

Mr. C. S. Middlewick

Appointed System Manager, Port Elizabeth, South African Railways



The late Mr. J. P. Johnson

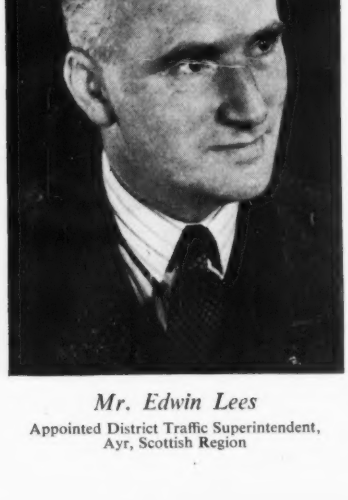
Vice-President, Western Region, C.N.R., 1948-50

Kapoor later was transferred to Bombay, where shortly afterwards he was promoted Chief Transportation Superintendent, Great Indian Peninsula Railway. He was appointed Chief Operating Superintendent of the East Indian Railway in March, 1951.

Mr. J. A. Cussons, Port Goods Superintendent, Cape Town, South African Railways, who, as recorded in our July 11 issue, has been appointed System Manager, East London, became a clerk in 1910 in the Cape Province. He has seen service in every province of the Union and after a spell in 1935 as Stationmaster, Middelburg, Cape Province, became a District Inspector, first at Beaufort West, then Worcester and, finally, Pretoria. After being Senior Audit Inspector at Durban, he was appointed Goods & Passenger Agent at Germiston in 1945. In 1948, he was Superintendent (Commercial & Staff) at Bloemfontein and in 1949 was appointed to the position of Port Goods Superintendent, Cape Town.

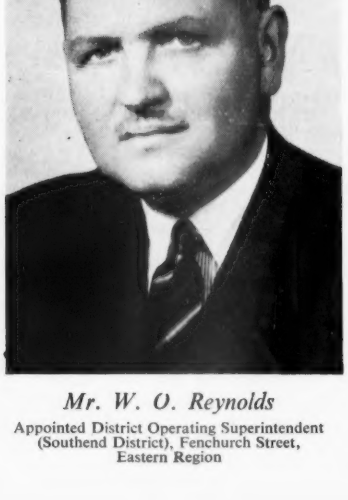
Mr. C. S. Middlewick, System Manager, Windhoek, South African Railways, who, as recorded in our July 11 issue, has been appointed System Manager, Port Elizabeth, joined the railway service as a clerk in 1910 and was in the staff section at Headquarters, Johannesburg, for 20 years before being appointed Welfare Officer at Bloemfontein, Orange Free State. He served in various centres until 1946, when he became Administrative Superintendent (Railway Police). He was appointed System Manager, Windhoek, in 1948.

We regret to record the death on September 12, at the age of 63, of Mr. J. P. Johnson, Vice-President, Western Region, Canadian National Railways, 1948-50. He was born at Castlebar, Quebec, and obtained a bilingual education at Danville Academy. He began his railway career as a telegrapher with the former Grand Trunk Railway in 1905 and in 1908 became a dispatcher. In 1915 he was appointed Chief Train Dispatcher & Trainmaster for the National Transcontinental Railway at Grant, Ontario. Mr. Johnson became Inspector of Transportation at Winnipeg in 1919 and afterwards served in superintending positions at Melfort, Prince Albert, Saskatoon, Dauphin, and Calgary until December, 1936, when he was appointed General Superintendent, Northern Ontario District, with headquarters at North Bay. In September, 1941, he was transferred to Toronto as General Superintendent, Southern Ontario District. In January, 1942, Mr. Johnson was promoted to the position of Chief of Transportation for the system and he became Vice-President &



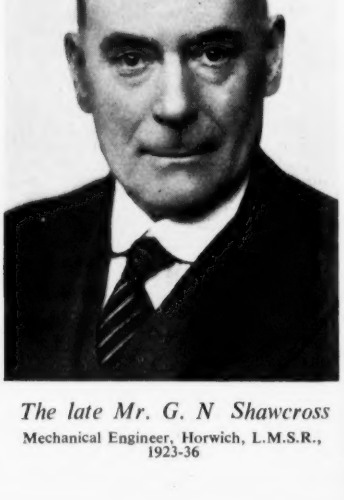
Mr. Edwin Lees

Appointed District Traffic Superintendent, Ayr, Scottish Region



Mr. W. O. Reynolds

Appointed District Operating Superintendent (Southend District), Fenchurch Street, Eastern Region



The late Mr. G. N Shawcross

Mechanical Engineer, Horwich, L.M.S.R., 1923-36

General Manager, Atlantic Region, in 1944. He was apointed Vice-President, Western Region, in 1948 and after retirement in 1950 had been living in Ottawa.

Mr. Edwin Lees, District Traffic Superintendent, Carlisle, London Midland Region, who, as recorded in our September 5 issue, has been appointed District Traffic Superintendent, Ayr, Scottish Region, joined the service of the Lancashire & Yorkshire Railway in 1914. After the 1914-18 war, during which he served in the King's Own Royal Lancashire Regiment, he rejoined the Railway and occupied various posts in the Commercial and Operating Departments. Between 1931-41 he held appointments as Assistant District Controller at Rugby, Patricroft, Liverpool, Birmingham, and Willesden. He then became District Controller, Lancaster, and in 1946, District Controller, Wigan. The same year he was appointed Assistant District Operating Superintendent, Liverpool Lime Street, and in 1949 went to Carlisle as District Traffic Superintendent.

Mr. W. O. Reynolds, M.B.E., Assistant District Operating Superintendent, Doncaster, Eastern Region, who, as recorded in our September 19 issue, has been appointed District Operating Superintendent (Southend District), Fenchurch Street, joined the L.N.E.R. in 1933 and after experience at a number of stations in the North Eastern Area, was transferred to the Divisional General Manager's Office at York. He was appointed a traffic apprentice in 1936, and took up the position of Assistant to the District Superintendent, Manchester, in 1939 at the conclusion of his training. He joined the Royal Engineers in 1940 and was demobilised in 1946 with the rank of Lt.-Colonel. The award of M.B.E. was made to him in January, 1945, and he was twice mentioned in despatches. Mr. Reynolds was appointed Assistant to the District Superintendent, Stratford, in 1946, and the following year moved to a similar position at Doncaster. He was promoted Assistant District Superintendent, Lincoln, in February, 1948; Assistant District Operating Superintendent, Nottingham, in December of the same year; and Assistant District Operating Superintendent, Doncaster, in 1949.

We regret to record the death on September 24 of Mr. G. N. Shawcross, M.B.E., Mechanical Engineer, Horwich, L.M.S.R., 1923-36. He joined the Lancashire & Yorkshire Railway as an apprentice in 1890, and, after holding various positions in Horwich Works, was placed in charge of the Testing Department in 1899. Two years later he became Manager of the Forge Department, and was soon afterwards promoted to be Assistant Works Manager. During the 1914-18 war he served as Acting Locomotive Works Manager under Mr. G. Hughes, and was responsible for extensive munition work, as well as the ordinary work of the Department; he was confirmed as Works Manager in 1919. In 1918 he was awarded the M.B.E. Mr. Shawcross was appointed Divisional Mechanical Engineer, Horwich, on the amalgamation of the London & North Western and Lancashire & Yorkshire Railways in January, 1922, and was designated Mechanical Engineer as from January 1, 1923. He retired in 1936. He was at one time President of the Technical College and Institute at Horwich. Mr. Shawcross was a Vice-President of the Institution of Locomotive Engineers, 1925-31, and was a Member of the Council of the Institution of Mechanical Engineers in 1935, and Chairman, N.W. Branch of that Institution in 1935-6. He had been a Major, R.E. Engineer & Railway Staff Corps, until 1937.

Sir James Milne, formerly General Manager of the Great Western Railway, has been appointed a Director of the Bedford General Insurance Co. Ltd.

We regret to record the death on September 28, at the age of 60, of Sir Hector McNeill, D.L., LL.D., J.P., Part-time Member, Docks & Inland Waterways Executive, and Director, David Macbrayne Limited.

The North Eastern Region announces the appointment of Mr. Ronald Lawrence, Assistant to District Operating Superintendent, Birmingham, London Midland Region, as Assistant District Operating Superintendent, Leeds Central, North Eastern Region.

We regret to record the death on September 28, at the age of 86, of Mr. C. W. Needham, who retired from G.W.R. service in 1933, after over 20 years in charge of the Claims & Compensation Section of the General Manager's Office. He was with the G.W.R. for 52 years and after joining the Goods Department, transferred to the General Manager's Office. Mr. Needham had served under eight successive General Managers.

Mr. E. C. Noble, whose death we briefly recorded in our September 26 issue, was Chief Mechanical Engineer of the Entre Rios and Argentine North Eastern Railways between 1921-29 and for a short period General Manager of both railways. He began his railway career at Swindon Works, G.W.R., in 1888, and after serving an apprenticeship there was connected with the Royal Naval Dockyard at Keyham. In 1899 he became chargeman at Swindon and in 1900 was on constructional work in connection with the Sudan military railways. He joined the North Western, Northern & Midland Railways of Uruguay in 1901 and subsequently became Port & Marine Superintendent, Entre Rios Railway. Mr. Noble was appointed Chief Mechanical Engineer, Entre Rios Railway in 1916, and as from 1921 became also Chief Mechanical Engineer, Argentine North Eastern Railway; later he was General Manager for a short period. He was a Member of the Institution of Mechanical Engineers and on two occasions was President of the South American branch of the Institution of Locomotive Engineers.

Miss Pearl Edith Wadham, M.B.E., who retired from British Railways on September 30, had a record of railway service which probably was unique among women. After private employment, she joined the General Manager's staff of the Great Eastern Railway in 1916, was appointed Private Secretary to Sir Henry Thornton, the General Manager, and went with him in 1917 to the War Office. During her service there, she also helped Sir Guy Granet. In 1919 she returned to Liverpool Street, and remained there as secretary to a continuous line of General Managers of the G.E.R. and L.N.E.R.—Sir Henry Thornton, Mr. Parnwell, Mr. Alex. Wilson, Mr. Thurston, Sir Charles Newton, Mr. Mauldin, Mr. Mills, and Mr. (now Sir) Michael Barrington-Ward, accompanying the last-named to Marylebone in 1947, on his appointment as Member of the Railway Executive. Her capacity for work, her tact, and her kindly attitude to all who had to call at the outer office for interview, have been outstanding features of this remarkable woman, who steered the Liverpool Street "Eight" for so long, and with such skill. Miss Wadham was awarded the M.B.E. in 1944.

Among those on board the Cunard liner *Scythia*, which arrived at Southampton from Quebec, *via* Havre, on October 2, were: Messrs. A. S. Quartermaine, President, Institution of Civil Engineers; Sir David Pye, President, Institution of Mechanical Engineers; and Sir John Hacking, President, Institution of Electrical Engineers. They had attended the centennial celebrations of the American Society of Civil Engineers and a recent convocation of engineers in Chicago.

Mr. Edgar A. Webb, Resident Storekeeper of the Locomotive Stores, Crewe, London Midland Region, who, as recorded in our September 26 issue, has retired, recently was presented with a Nell Gwynne clock by the Chief Stores Superintendent's staff at Euston and fellow Resident Storekeepers. Mr. A. B. McLeod, Stores Superintendent, London Midland Region, made the presentation at a large gathering in Euston House. Except for 11 years (1931-42) when he was transferred to Derby as Resident Storekeeper, Mr. Webb had always been in the locomotive stores at Crewe; he joined the Department in 1902. He became Deputy Resident Storekeeper in 1920 and Resident Storekeeper in 1942.

Institute of Transport Awards

The Council of the Institute of Transport has approved the following awards for papers submitted during the 1951-52 session, and in respect of successes at the Institute examinations held in 1952:—

Bristol and White-Smith Air Transport Medal to Mr. N. E. Rowe, Technical Director, Blackburn & General Aircraft Co. Ltd., for his paper on "Helicopter Transport in Great Britain."

Institute Graduate Award to Mr. A. Hayman, Traffic Assistant, Manchester Ship Canal Company, for his paper on "The Foundation of Tolls, Rates and Charges in the Development of Transport."

British Transport Commission Prizes: (*a*) to Mr. W. Hughes (Graduate), British Road Services, for his paper on "The Integration of Road and Rail Freight Transport"; (*b*) to Mr. A. G. Kershaw (Graduate), Secretary, British Travel & Holidays Association, for his paper on "Tourist Travel—an Aspect of the Demand for Passenger Transport."

Institute Student Award to Mr. G. Trueman, Thos. Cook & Son Ltd., for his paper on "From Cairo to the Cape."

Associate Membership Examination: (*a*) Prize for first place to Mr. G. W. Foulger (Graduate), British Railways, Eastern Region; (*b*) Prize for second place to Mr. G. Dawes (Graduate), Ribble Motor Services Limited.

Graduateship Examination: (*a*) Prize for first place to Mr. J. Berry, British Railways, North Eastern Region; (*b*) Prize for second place to Mr. J. B. Mander, British Railways, London Midland Region.

"*Modern Transport*" *Award* in recognition of a praiseworthy performance at the Graduateship Examination which has not qualified for another prize, to Mr. J. R. Day, the Railway Executive.

British Transport Commission Statistics. (Period No. 8)

Summary of the principal statistics for the four-week period ending August 10

STAFF

—	B.T.C. Head Office	British Railways	London Transport	British Road Services (Road Haulage)	Road Passenger (Provincial & Scottish)	Hotels & Catering	Ships & Marine	Inland Waterways	Docks, Harbours, Wharves	Railway Clearing House	Commercial Advertisement	Legal	Films	Total
Number ...	282	610,471	98,474	74,981	63,221	16,931	6,620	4,808	21,192	595	199	321	42	898,137
Inc. or dec.	−1	−17	−213	−604	−15	+72	+64	−12	+35	+2	+1	—	—	−688

BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

—	Four weeks (Period No. 8)		Aggregate for 32 weeks	
	1952	1951	1952	1951
	£000	£000	£000	£000
British Railways—				
Passengers	13,732	13,595	69,045	66,942
Parcels, etc., by passenger train	2,779	2,599	21,550	20,020
Merchandise	6,311	6,540	62,778	58,848
Minerals	2,754	2,485	25,232	21,596
Coal & coke	6,137	5,769	61,344	54,365
Livestock	93	87	846	648
	31,806	31,075	240,795	222,419
British Railways—				
C. & D. and other road services	813	808	7,036	6,401
Ships and Vessels	1,634	1,665	7,083	7,260
London Transport—				
Railways	1,410	1,240	10,927	9,858
Buses & coaches	3,285	2,754	23,802	20,406
Trolleybuses	714	725	5,907	5,994
	5,409	4,719	40,636	36,258
British Road Services—				
Freight charges, etc.	5,047	5,503	46,624	46,031
Road Passenger Transport	5,008	4,523	28,905	26,268
Docks, Harbours & Wharves ...	1,313	1,159	9,842	8,246
Inland Waterways	151	151	1,352	1,190
Hotels & Catering	1,456	1,469	9,899	9,766
Total	52,637	51,072	392,172	363,839

LONDON TRANSPORT

—	Passenger journeys	Inc. or dec. per cent. over 1951	Car miles	Inc. or dec. per cent. over 1951
	000		000	
Railways	41,556	−9·9	16,695	−5·9
Buses & coaches	226,490	−0·9	27,781	+5·0
Trolleybuses	56,780	−21·2	5,797	−21·5
Total	324,826	−6·3	50,273	−2·6

INLAND WATERWAYS

Tonnage of Traffic and Ton Miles

—	Tonnage	Inc. or dec. per cent. over 1951	Ton miles	Inc. or dec. per cent. over 1951
	000		000	
Coal, coke, patent fuel & peat	417	+12·4	5,420	−3·1
Liquids in bulk	135	−14·0	3,566	−13·4
General merchandise	288	−9·5	4,575	−1·2
Total	840	−0·7	13,561	−5·4

BRITISH RAILWAYS

Rolling Stock Position

—	Operating stock	Number under repair	Available operating stock	Serviceable stock in 1951
Locomotives	18,924	3,083	15,841	15,694
Coaching vehicles	57,636	4,958	52,678	53,137
Freight wagons...	1,121,560	99,586	1,021,974	1,028,486

BRITISH RAILWAYS

Passenger Journeys (month of June, 1952)

Full fares	Excursions, cheap day, etc.	Other descriptions	Early morning and workmen	Season tickets	Total	Inc. or dec. per cent. over 1951
15,754,000	25,345,000	4,901,000	16,675,000	16,618,000	79,293,000	−3·7

BRITISH RAILWAYS

Freight Tonnage Originating and Estimated Ton-miles (Period No. 8)

—	Merchandise	Minerals	Coal & coke	Livestock	Total	Inc. or dec. per cent. over 1951
	000	000	000	000	000	
Tons originating ...	3,217	4,221	10,469	64	17,971	−0·9
Ton-miles	424,548*	338,269	644,957	—	1,407,774	−5·0

* Includes livestock

BRITISH RAILWAYS (Period No. 8)

—	Total steam coaching train-miles	Total electric coaching train-miles	Total freight train-miles	Freight train-miles per train engine-hour	Net ton-miles per total engine-hour	Locomotive coal consumption	
						Total tons	Lb. per engine-mile
1952	16,746,000	3,882,000	9,539,000	9·1	565	976,000	58·1
1951	16,712,000	3,869,000	9,766,000	8·8	569	993,000	58·3

Opening of Calverton Branch Railway and Colliery

Connections with Leen Valley line and Mansfield branch

On September 24, Lord Leathers, Secretary of State for the Co-ordination of Transport, Fuel & Power, opened a new colliery at Calverton, Notts., and a 7½-mile branch line which has been built to connect it with existing lines of the former L.M.S.R. and L.N.E.R. at Bestwood.

Calverton Colliery, situated approximately seven miles north-east of Nottingham, is the first large new colliery to come into production since the mines were nationalised. The sinking of the colliery was originally planned by B. A. Collieries Limited, and the first sod was turned on June 14, 1937, by Colonel C. G. Lancaster, Chairman & Managing Director. Development was interrupted by the war but resumed in 1945, when the original proposals were reviewed.

In two years' time the output is expected to be some 1,250,000 tons a year. About 1,800 workers will be employed. The colliery is estimated to have a life of about 100 years, and the pithead plant is designed to deal with 450 tons of coal an hour, which will be taken from the colliery over the branch railway. The colliery has two shafts, each 560 yd. deep, and all coal will be cut mechanically and hand-loaded on to belt conveyors.

The layout of the surface is designed and treated so as to conform with the landscape and, as far as possible, not disturb the local amenities.

Layout of Line

The new Calverton branch takes off from the Nottingham-Mansfield line of the former L.M.S.R. at Bestwood Park Junction, and from the Leen Valley line of the former L.N.E.R. at Calverton Branch Junction. The connecting lines converge at Papplewick Junction and then run eastward to the colliery. The length of the branch from Bestwood Park Junction to its connection with the colliery sidings north of the coal preparation plant is 7 miles 12 ch. and the length of the section between Calverton Branch Junction and Papplewick Junction is 37 ch. The total length of double-track line so constructed is just over 7½ miles. Papplewick Junction is approximately 5½ miles from the colliery.

The scheme for the construction of the Calverton branch was originally negotiated between the L.M.S. and L.N.E. Railways and B.A. Collieries Limited; Parliamentary powers for its construction were obtained under the London, Midland & Scottish Railway Act, 1947. The construction of the branch and associated sidings at Bestwood Park Junction and at Papplewick Junction has involved the removal of over 1,000,000 cu. yd. of spoil, and the laying of 34,000 yd. of plain track and 3,100 yd. of points and crossings.

Five new underbridges and four new overbridges have been provided. Three underbridges are of similar construction with mass concrete abutments and wings supporting pre-cast reinforced concrete slabs manufactured in the concrete depot at Newton Heath and erected in advance of the embankment from the ground. The fourth underbridge has a square span of 40 ft. and a skew span of 68 ft. Mass concrete abutments and wings support two independent spans consisting of welded plate girders, steel floor beams and *in situ* concrete deck. Similar in design is the fifth underbridge, also across a public road which has a heavy traffic; it has a square span of 53 ft. The girders for both bridges were brought to site by road and lifted into place by pole. Two of the overbridges are occupation works both 14 ft. wide; they are three-span structures erected *in situ*.

The main overbridge is at Mansfield Road, which carries a heavy traffic. The road is diverted to pass over the new bridge which is 60 ft. wide with a square span of 27 ft. Mass concrete abutments and wings support an *in situ* reinforced concrete deck. The approach embankments 100 ft. wide, required considerable filling.

Features of the colliery being pointed out to Lord Leathers (third from right). Also in the group are Messrs. J. Benstead (extreme left), and J. R. Watkins and John Elliot (extreme right)

The remaining overbridge has a width of 35 ft. and a skew span of 49 ft. The mass concrete abutments and wings are constructed in trenches cut out of the sandstone. The deck is formed of welded steel girders with an *in situ* reinforced concrete floor. All bridges are designed so that future lifting necessitated by subsidence can be easily carried out. Jacking pockets are provided, and the up and down tracks are carried on separate structures.

There are four new mechanical signalboxes, as follows:—

(1) Bestwood Park Junction, controlling the junction with the former L.M.S.R. Nottingham-Mansfield line, Bestwood Park sidings and the Bestwood Park colliery branch; this box has 55 levers and displaced a smaller box on an adjacent site;

(2) Calverton Branch Junction, with 35 levers controlling the junction with the former L.N.E.R. Leen Valley line and the west end of four traffic sidings;

(3) Papplewick Junction, with 40 levers, controlling the junction of the connections from the Mansfield and the Leen Valley lines, and sidings;

(4) Calverton Colliery, with ten levers, controlling the convergence of the up and down branch lines and the divergence into the colliery sidings.

The first ballast train reached the colliery end of the branch early in October, 1951. The first commercial traffic, consisting of wagons of steelwork for the colliery, passed over the new line in January, 1952, being worked by the Railway Engineer's ballast train. Subsequently, a limited amount of coal was similarly worked in the outwards direction. The line was handed over by the Engineer for full working to the Operating Department on July 22, 1952. At present, services in both directions are being worked over the up line, until the colliery output builds up.

The sidings were designed to fit into the general contours of the land. They have a capacity of 1,000 full wagons and 770 empty wagons. Diesel locomotives, in short-wave radio communication with the full weigh office, will be used in the sidings.

Among those who were present at the opening ceremony at Calverton were:—

British Transport Commission: Messrs. J. Benstead, Deputy Chairman, and F. A. Pope, Member.

Railway Executive: Messrs. D. S. M. Barrie, Public Relations Officer; V. M. Barrington-Ward, Member; John Elliot, Chairman; A. J. Pearson, Chief Officer (Administration); J. C. L. Train, Member, and General Sir Daril G. Watson, Member.

London Midland Region: Messrs. G. Dow, Public Relations & Publicity Officer; A. E. Hammett, Commercial Superintendent; S. G. Hearn, Operating Superintendent; E. S. Hunt, Assistant Chief Regional Officer; J. Taylor Thompson, Civil Engineer; J. W. Watkins, Chief Regional Officer; and S. Williams, Signal & Telecommunications Engineer.

Eastern Region: Messrs. C. K. Bird, Chief Regional Officer, and E. W. Rostern, Operating Superintendent.

National Coal Board: Messrs. E. H. Browne,

Director General, Production, and A. Hill, General Manager, Area No. 6; Sir Hubert Houldsworth, Chairman; Sir William McIlvray, Director General, Marketing; and Mr. R. Ringham, Chairman, East Midlands Division.

Lord Leathers, before he pressed a button which set the colliery plant in motion, paid tribute to British Railways for hauling so much coal last winter without a hold-up, and said that coal and railways could not exist separately. Coal would flow from Calverton for 100 years.

Sir Hubert Houldsworth said that the area had increased its annual output of coal by 82 per cent. since vesting date. He praised the facilities provided by British Railways at Calverton.

Mr. John Benstead referred to the speed with which the branch had been constructed. It had been considered by the former companies but only in 1950 did the B.T.C. sanction the necessary expenditure of more than £1,000,000. Relations between the B.T.C. and the National Coal Board were most cordial. Railways and mines could not do without each other; the nation needed both.

Mr. John Elliot, who proposed the toast of the guests at a luncheon held at the Victoria Station Hotel, Nottingham, said that the new sidings at Calverton Colliery had been laid out to take the new 24½-ton standard wagon, which they would introduce as industry allowed.

Colonel C. G. Lancaster, in reply, said that in Calverton they had the most advanced pit in Europe. In a sense it was an international project as it was the outcome of visits to the Continent and the United States to inspect the best and latest technique.

East Indian Railway Annual Dinner

The effect of re-grouping of the Indian Railways into six zones

The 49th annual dinner of the East Indian Railway Officers' Association was held at the Connaught Rooms, London, W.C.2, on September 24. Mr. G. A. R. Trimming, a former Chief Mechanical Engineer, presided. The following accepted the invitation to be present and comprised 42 members of the Association and 12 guests:—

Members: Messrs. H. J. Allinson, J. A. Bell, C. S. Buicke, C. N. Burns, S. P. J. Cambridge, D. D. Cruickshank, L. N. Flatt, J. M. Fenton, E. R. Fleeton, Brigadier R. Gardiner, Messrs. J. C. Gibson, R. H. Goodman, Sir Hugh Hannay, Messrs. R. C. Harvey, D. W. Hayden, J. R. Hemsley, H. Howe, J. W. C. Holt, D. H. Hughes, H. L. Kelly, T. Kidd, Messrs. J. C. Lamb, G. T. Lemon, T. S. R. Mills, J. A. Morris, Captain E. M. Padwick. Messrs. J. F. Pegg, H. W. Puttick, W. Ramsey, Dr. E. N. D. Repper. Messrs. D. D. Roberts, F. E. Robertson, G. W. N. Rose, R. S. Saunders-Jacobs, B. G. Smith, O. R. Tucker, A. V. Venables, H. C. Wallace, R. M. Watson, G. Waugh.

Guests: Messrs. A. B. Hannay, A. Johnson, H. A. Joscelyne, P. R. Leigh-Bennett, P. H. Maflin, P. C. Mukerjee, R. Oakley, Sir William Stanier, Messrs. W. S. C. Tully, G. R. Wylde, A. Gemmell.

Mr. Trimming, in proposing the toast of the evening, the East Indian Railway, first expressed his thanks to the committee of the Association in inviting him to take the chair, an honour which he greatly appreciated. He also expressed his appreciation of a letter from Mr. K. B. Mathur, General Manager, Eastern Railway, wishing the Association every success.

Mr. Trimming said that a great deal had happened to the Indian railways since the Association's dinner last year. The railway map of India had been completely changed, familiar names had disappeared, and railways had lost their old identity, a feature which must necessarily be viewed with some regret. All railways had been affected by re-grouping, but they were concerned principally with the East Indian Railway, which had lost some of its limbs, while other had been grafted on. This had happened before, but the railway had survived, and would continue to survive.

In dealing with re-grouping as it affected the E.I.R., the Chairman said that in the area now served by the Eastern Railway lay much of the coal and mineral wealth of India, not taking into consideration the still untapped resources of the Central Provinces. The Eastern Railway stretched from Moghulsurai in the north-west to Vizagapatam in the south and across to Nagpur and Katni, and covered an area of some 200,000 sq. miles, serving a population of 67 million.

There appeared to be immense possibilities if the present re-grouping were carried out in the same spirit as was the amalgamation of the Oudh & Rohilkhand and the E.I.R. in 1925, which had gone down in the history of Indian railways as one of the smoothest transitions ever to take place. This he considered had been largely due to Sir Hugh Hannay, who was placed on special duty to draw up and inaugurate the scheme, and to the administrative ability of Sir George Colvin, then Agent of the E.I.R. The amalgamation was made somewhat more difficult, as at the same time the divisional system was introduced. However, the result was the welding together of the personnel into one homogeneous whole, in a remarkably short space of time.

There were now only six zonal railways in India, each of which had between 5,000 and 6,000 miles of track, and each had been laid out with the idea that each group would carry the principal commodities of the area it served direct from source to ports or users, without the intervention of another railway, and he considered that the arrangement should result in smoother working.

In acknowledging the work done for the Dinner Association by Sir Hugh Hannay, who had, for a number of years, been Chairman of the permanent committee of the Association, Mr. Trimming said it was appropriate that Sir Hugh had consented to be the Chairman next year, since they would celebrate not only the Jubilee of the Association Dinners, but also the centenary of the East India Railway.

Mr. P. H. Maflin, a former member of the Railway Board, said that he greatly appreciated the invitation to attend, and the dinner had given him the opportunity to renew old friendships.

Mr. J. A. Bell, former Agent of the E.I.R., expressed his appreciation of the work done by the permanent committee of the Association, with particular reference to the Honorary Secretary, Mr. R. C. Harvey, to which Mr. Harvey replied suitably.

Sir Hugh Hannay, former Agent, E.I.R., and former member of the Railway Board, expressed his pleasure at being asked to take the chair at the Jubilee dinner of the Association, which will be held next September.

He expressed the hope that as next year's dinner would be a special occasion, members of the Association would be present in even larger numbers than this year.

The dinner arrangements entailed a great deal of work for both the permanent committee and the Honorary Secretary. He was sure that if all concerned did their best, they could look forward to a record attendance.

G.N.R. "Centenaries Express"

The centenary of the opening on July 18, 1852, of the Great Northern Railway "Towns Line" from Werrington Junction, north of Peterborough, to Retford *via* Grantham and Newark, and that of Kings Cross Station, opened on October 14, 1852, were celebrated by the running on September 28 of the "Centenaries Express" from Kings Cross to York and back.

Before the G.N.R. reached London, the established route from London to York was from Euston *via* Rugby, Derby, and Normanton, available from 1840 and 219 miles long, four separate railways being traversed, with three changes of carriage. The G.N.R. was formed in 1846 by the amalgamation of the Direct Northern and London & York Railways. Both these lines chose practically the same route as far as Peterborough, but whereas the Direct Northern proposed to go through the Lincolnshire fens, the London and York favoured the route through Grantham, which was the one chosen for the main line.

The G.N.R. as authorised was to commence at Kings Cross Station and reach York *via* Hitchin, Peterborough, Grantham and Doncaster, with a loop from Peterborough to Bawtry, *via* Boston, Lincoln and Gainsborough. The first portion of the G.N.R. to be ready for public traffic was from Louth to Grimsby, this being the East Lincolnshire, leased to and worked by the G.N.R. from its opening.

North of Doncaster, the lines from Arksey to Askern and from Doncaster to Arksey were completed, the former in July, 1848, and the latter in August of the same year. On October 17, 1848, the first portion of the loop was completed, from Werrington to Lincoln *via* Boston. A portion of the main line, from Retford to Doncaster, was opened in September, 1849, while the Manchester, Sheffield & Lincolnshire line from Retford to Sykes Junction was opened in August, 1850, when also the G.N.R. main line from Werrington to London (Maiden Lane) was opened. Kings Cross Station replaced the Maiden Lane temporary terminus on October 14, 1852.

The original intention was for the G.N.R. to go direct from Doncaster to York, but having made a connection with the Lancashire & Yorkshire at Askern, running powers were obtained in 1850 over that railway to Knottingley and thence over the York & North Midland

line into York. The direct line from Shaftholme Junction to York *via* Selby was not opened until 1871.

The "Centenaries Express," organised by the Eastern Region in conjunction with Messrs. H. T. S. Bailey, A. F. Pegler, and L. J. W. Smith, left Kings Cross at 9.15 a.m. and ran by the main line to York, reached at 12.28 p.m., 2 min. ahead of schedule, with a load of 350 tons tare. On the return journey the route was over the lines used before the "Towns Line" was opened, *via* Church Fenton, Knottingley, Doncaster, Retford, Gainsborough Lea Road, Sykes Junction, Lincoln, and Boston. The train was hauled in both directions by class "A4" 4-6-2 type locomotive No. 60007, *Sir Nigel Gresley*. Mr. L. P. Parker, Motive Power Superintendent. Eastern Region, accompanied the party.

Exhibition at Kings Cross

The culmination of the centenary celebrations will be an exhibition staged by British Railways at Kings Cross Station on October 13-18. This will include, besides models of outstanding G.N.R. and L.N.E.R. locomotives, actual locomotives: Stirling 8-ft. single No. 1, Ivatt Atlantic No. 251, and the Gresley Pacific *Mallard* which made the world speed record for a steam locomotive, 126 m.p.h., in 1938. Admission will be by G.N.R. type ticket, cost 1s. (6d. for children under 14). The exhibition will be the subject of a television broadcast at 9.30 p.m. on October 14.

Staff & Labour Matters

Railway Wage Claim

Hearing by the Railway Staff National Tribunal, of which Sir John Forster is Chairman, of the claim by the N.U.R., A.S.L.E.F., and T.S.S.A., for a 10 per cent. pay increase and enhanced payment for Saturday work after noon for salaried and conciliation staff, begins on October 6. The claim was referred to the Tribunal after it was declined by the Railway Executive at a meeting of the Railway Staff National Council on July 28.

Engineering Wages

The C.S.E.U. executive council decided on September 24 to implement with effect from October 20 its earlier resolution to ban overtime and piecework in the engineering and ship-repairing industries because of the rejection by the employers of the men's wage claim. Although some union representatives abstained from voting, action to ban overtime and piecework was approved with no dissentients. The employers' federations had offered to take the claim to arbitration, but the unions have not accepted this suggestion.

The Confederation considers that the employers were refusing opportunities for further discussion which would enable the normal process of collective bargaining to operate; in earlier talks with officers of the Ministry of Labour the C.S.E.U. expressed its readiness to negotiate. The Confederation, however, stated its view that the employers had ignored the importance of free negotiations in maintaining industrial peace. For the Engineering & Allied Employers' National Federation, Sir Alexander Ramsay pointed out that there had been three full-dress conferences on the subject at issue and there had been failure to reach agreement; the employers had offered arbitration and the unions had refused.

To end the deadlock, Sir Robert Gould invited representatives of the engineering employers and the unions to a joint meeting on October 2. Sir Walter Monckton, Minister of Labour, also has invited the shipbuilding employers and the C.S.E.U. to a joint meeting at the Ministry on October 7.

Award for Bus Workers

The National Council for the Omnibus Industry has announced the award of the Arbitration Tribunal in respect of bus workers employed by provinicial undertakings controlled by the B.T.C. and by private companies. The award provides for an increase of 7s. a week in basic rates of pay of drivers, conductors, and certain semi-skilled workers and skilled maintenance staff.

Birmingham Snow Hill Station

The first public express passenger train ran from Paddington *via* Oxford to Snow Hill Station, Birmingham, Great Western Railway, on October 1, 1852, the day of the official opening of the railway from Banbury to Birmingham.

By the Birmingham & Oxford Junction Railway Act of August, 1846, a line was authorised from a junction with the L.N.W.R. near Curzon Street, Birmingham, to a junction with the Oxford & Rugby Railway near Fenny Compton, and the Birmingham Extension Act of the same date authorised a railway in Birmingham, from a junction with the Birmingham & Oxford Railway at Adderley Street to Great Charles Street. Stations were to be built between Snow Hill and Livery Street, and between Monmouth Street and Great Charles Street. A further provision was that the line between Moor Street and Monmouth Street should be in tunnel. The railways were vested in the G.W.R. by the Great Western Railway (Additional Powers) Act of 1848. Construction began in 1847, the engineer being I. K. Brunel and the contractor Peto & Betts.

Negotiations first were pursued with the L.N.W.R. for a common station in Birmingham, but after they fell through, the extension to Snow Hill was started in 1851. Work on the station did not start until the end of January, 1852. The major engineering works on the new line included the Leamington Viaduct with a bridge of 105-ft. span over the High Street; a 160-ft. bridge over the Avon; the Bordesley Viaduct of 58 brick arches; and the Snow Hill Tunnel, most of which was made as an open cutting and then covered to comply with the Act of 1846, the land above being sold later. The original Snow Hill Station, a temporary wooden shed built in time for the opening, remained in use practically unaltered for nearly 20 years.

DIESEL FOR SOAP AND CHEMICAL WORKS.—A diesel locomotive recently delivered by John Fowler & Co. (Leeds) Ltd. to the Warrington soap and chemical works of Joseph Crosfield & Co. Ltd., is the eighth Fowler locomotive supplied to that firm in 14 years. The new locomotive is powered by a McLaren 100 b.h.p. four-cylinder direct-injection diesel engine. Electric starting, pneumatically-operated Borg & Beck clutch, Westinghouse air brakes and air sanding equipment, engine heater, and battery charger are among the auxiliary services. Total weight of the locomotive is 19 tons.

Contracts & Tenders

The Railway Executive has arranged with the Wagon Building Association to build all-steel 16-ton mineral wagons for the five year period 1953-57.

Contracts for 57,490 wagons have been placed to date with the following firms, and further contracts are pending:—

Birmingham Railway Carriage & Wagon Co. Ltd.: 10,000
Butterley Co. Ltd.: 5,000
Cambrian Wagon & Engineering Co. Ltd.: 10,500
Derbyshire Carriage & Wagon Co. Ltd.: 4,600
P. & W. MacLellan Limited: 4,550
Metropolitan-Cammell Carriage & Wagon Co. Ltd.: 13,000
Tees-Side Bridge & Engineering Works Limited: 9,840

The Rhodesia Railways have placed a contract with the English Electric Co. Ltd. for 23 2,000-h.p. 1C-C1 diesel-electric locomotives.

A recent Reuter's report from New Delhi states that, according to Mr. A. K. Chanda, Financial Commissioner, Indian Railway Board, who has just returned from a three months' tour of the European Continent, India has placed orders for rolling stock worth nearly £9,000,000 in Belgium, Italy, Germany, and Austria. Deliveries were expected within 18 months. 80 "WG" locomotives and 200 coaches are included in the orders.

The Railway Executive has placed a contract with Head, Wrightson & Co. Ltd. for 95 50-ton bogie rail wagons and 142 50-ton bogie rail, sleeper and ballast wagons.

The Peruvian Corporation has placed an order with G. R. Turner Limited for 12 bogie flat wagons, complete with wheels and axles. The order is an addition to an earlier contract for 25 bogie flat wagons referred to in our June 1, 1951, issue.

Usines de Braine-le-Comte, S.A., Braine-le-Comte, Belgium, has received an order for 350 automatic discharging bogie wagons for iron mines in Sweden.

De Dietrich & Cie., Reichshoffen-Usines, France, is completing an order for 12 twin-car 640 b.h.p. diesel-mechanical trains for the Algerian Railways.

Maschinenfabrik Oerlikon A.G. has received a contract to electrify on the 50-cycle single-phase system the Montenvers rack railway, with gradients of 1 in 4·5, extending from Chamonix to Mer de Glace, in France.

Societa Italiana Ernesto Breda has completed a new multi-car 3,000-volt d.c. high-speed electric train with observation domes—or "Belvederes"—for the Italian State Railways. It is to be used on the Milan-Florence-Rome route.

Schweizerische Wagon-und Aufzugfabrik A.G., of Schlieren-Zurich, Switzerland, has received an order from the Indian Government for 50 all-welded steel shells for bogie coaches, mainly third class, additional to 50 complete coaches now under construction.

The Crown Agents for the Colonies have placed orders for 35 Comet "90" trucks with Leyland Motors Limited for the Nigerian Railway.

Notes and News

Railway Engineer Required.—Applications are invited for the post of railway engineer required by manufacturers of iron and steel on the North East Coast. See Official Notices on page 391.

San Paulo Railway Capital Repayment.—An extraordinary meeting of the San Paulo (Brazilian) Railway Co. Ltd. in London on September 30 approved the board's proposal for the repayment of 3s. 4d. per 10s. unit, involving a sum of £500,000. This will reduce the issued capital of the company to £1,000,000.

U.S. Tour Buses on Show.—The three London Transport buses which this summer made a 12,000-mile tour of the United States and Canada under the auspices of the British Travel & Holidays Association, are to be on show in London at the Commercial Motor Exhibition, Earls Court. Pictures taken on the tour are on show in the buses.

Canterbury West-Whitstable Harbour Branch to Close.—On and from Monday, December 1 next, the freight train service on the Canterbury-Whitstable branch line of the Southern Region will be withdrawn. No passenger trains have run on the branch since 1930. Facilities for dealing with freight traffic will continue to exist at Canterbury West Station, and at Whitstable & Tankerton Station.

More Visitors to Britain.—The number of overseas visitors to Britain in August was about 107,000, a record for the month, and 7 per cent. more than in August last year. Of this total, 28,000 came from the U.S.A., an increase of 29 per cent. over August, 1951. The total of visitors from all sources from January to August was 532,300, 3 per cent. more than for the same period of last year. Announcing these figures, Sir Alexander Maxwell, Chairman of the British Travel & Holidays Association, stated at the annual dinner of the Passenger Vehicle Operators' Association on Monday, that he was keen to see the introduction of a regular long-distance coach or bus service, for tourist use, between London and the Continental centres.

International Timetable Conference.—The International Timetable & Through Carriage Conference opened at Nice on October 1, and is due to end on October 11. Nearly all major European railways are represented, also those of Turkey, and of other countries in the Near and Middle East concerned in the passenger connection with Central and Western Europe by the "Simplon-Orient Express." The British delegation includes:

Messrs. R. H. Hacker, Chief Officer (Continental), the Railway Executive; L. H. K. Neil, Continental Traffic Manager, Eastern & North Eastern Regions; S. W. Smart, Superintendent of Operation, and R. E. Sinfield, Continental Superintendent, Southern Region; and P. C. Durrant, General Agent for France, British Railways.

Bisley Branch and West Surrey Rail Tour.—The special train for the Bisley Branch excursion organised by the Railway Correspondence & Travel Society will leave Waterloo at 1.38 p.m. on November 23, and travel to Brookwood *via* East Putney and Wimbledon. It is hoped that it will be hauled on this part of the trip by an "0395" class locomotive. An "02" or "M7" 0-4-4 tank will be used on the branch. The return will be *via* Frimley, Ascot, Staines Central, Clapham Junction, and Ludgate Junction, arriving at Victoria at 4.34 p.m. It will be noted that the date of the excursion has been altered from November 22, as originally proposed and recorded in our September 19 issue. Cost, inclusive of itinerary, will be 12s. Applications, enclosing stamped addressed envelope, should be made to Mr. A. E. Hurst, 295, Portswood Road, Southampton, Hants.

White Lead Paints.—In our issue of September 26, reference was made to films showing laboratory tests to demonstrate the "wearing resistance" of the three grades of Octagon white lead. This should have read "staining resistance."

Historical Model Railway Society.—At 7 p.m. on October 20, Mr. T. S. Lascelles will read a paper entitled "A Historical Review of Railway Signalling, Down to the Grouping" at a meeting of the Historical Model Railway Society at the Headquarters of the Stephenson Locomotive Society, 32, Russell Road, W.14.

Special Trains for Potato Harvesters.—The Scottish Region on September 30 ran four special trains to take about 2,500 Glasgow school children from Buchanan Street Station to the North, where they are assisting in harvesting the potato crops in Perthshire, Angus, Kincardine, and Ross and Cromarty. Special trains will bring the harvesters back to Glasgow on Saturday, October 18.

Canadian Freight Rate Increase.—The Canadian Board of Transport Commissioners has reserved judgment on the application by the Canadian Pacific and Canadian National Railways for the immediate 8 per cent. general increase in freight rates, referred to in last week's issue. The Board still has to hear the applications for the further general increase of 9 per cent. and for a rise in domestic grain rates. The application for the 8 per cent. general increase was opposed by eight Provincial Governments, largely on the ground that the C.P.R. was expected to have a working surplus for 1952 of $9,000,000 after deduction for fixed charges and dividends.

Studying British Road and Rail Engineering.—A study of British methods of railway and road traffic control and the latest developments in railway and highway engineering is being made by Professor Alois Pendl, Professor of Road, Rail & Tunnel Engineering at the Technical University of Graz, Austria, during a two weeks' visit to the United Kingdom under British Council auspices from September 22 to October 4. His programme included visits to the Road Research Laboratory at Harmondsworth, the Mersey Tunnel, Crewe, Derby, London Transport Executive rail and road services, and the Imperial College of Science & Technology.

Institute of Transport 1952-53 Session.—During its 1952-53 session the Institute of Transport is holding the following Ordinary Meetings on Mondays at 5.45 p.m., at the Jarvis Hall (R.I.B.A.), 66, Portland Place, W.1: November 17, "Statistical Methods and Operational Research in Transport," by Mr. F. A. A. Menzler; December 8, Henry Spurrier Memorial Lecture, "The Operation and Economics of Passenger Road Transport," by Mr. James Amos; January 12, 1953, "Fundamental Principles of Railway Operation and Their Recent Development," by M. Louis Armand; February 9, Brancker Memorial Lecture, "The Influence of Military Aviation on Civil Air Transport," by Sir Frederick Handley Page; March 16, "Developments and Prospects in British Transport, with Special Reference to Railways," by Mr. A. J. Pearson.

Canadian Pacific Steamships London Representation.—On and from October 13, the address of Mr. D. K. Buik, Director, and Mr. J. Munro, Port Agent, Canadian Pacific Steamships Limited, will be City-Gate House, 39/45, Finsbury Square, London, E.C. 2. Telephone: Monarch 9732. Cables and foreign telegrams: Oscanpac, London. Inland telegrams: Oscanpac, Ave, London.

Prizes for N.E. Region Station Gardens.—Two hundred stations in the North Eastern Region have been awarded prizes and certificates in the Best Kept Station Gardens Competition for 1952. The highest award goes to Riding Mill (Northumberland), which also took a special prize last year. The other special prize winners are Wallingfen (East Yorkshire), Reedsmouth (Northumberland), both first class last year; and Stocksfield (Northumberland), which has been in the special category since 1948. Of the remainder, 28 stations receive first class prizes, 51 second class prizes, 100 third class prizes and 17 certificates of commendation.

Society of Engineers Churchill Gold Medal.—The presentation of the Churchill Gold Medal of the Society of Engineers to Air Commodore Sir Frank Whittle will be made at the apartments of the Geological Society, Burlington House, on October 6. The award has been approved by Mr. Winston Churchill, who is an Honorary Fellow of the Society of Engineers, and is made for the most noteworthy development in engineering, or contribution to contemporary engineering. It is the first award to be made by this Society.

Proposal for Nursery Coaches.—The East Midland Area Transport Users' Consultative Committee on September 18 adopted a recommendation that special railway coaches with appropriate facilities should be provided for mothers travelling with young children. Mr. A. A. Snowball, for the Railway Executive, told the meeting that members of the railway staff were instructed to look after passengers with children and if asked would provide hot water bottles and so on. It was also stated by the Railway Executive that some main-line stations had a section of the women's waiting room partitioned off, and gas rings, measuring beakers, clean jugs, and low stools were provided free for mothers attending to young babies. The meeting decided to recommend the plan for nursery coaches to rolling stock designers.

Manpower Situation in 1951.—The annual report of the Ministry of Labour & National Service, published on September 17 (Cmd. 8640, price 6s. net, 6s. 3d. post free), shows that during the autumn of 1951 the total working population reached a peak of 23,500,000, the highest total ever recorded in peace time. The low birth rate in the 1930s continued to affect adversely the number of young persons entering employment, and this will continue until 1957 when the higher birth rate from 1942 onwards will begin to produce a material increase in the number of school-leavers. Demand for labour as represented by the number of vacancies notified to the Employment Exchanges and

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

DRAUGHTSMAN required by East Midland Firm of Railway Permanent Way Manufacturers. Experience in British Standard and Private Sidings practice, Site Surveys, etc., required. Only those with P.W. experience need apply. Superannuation Scheme, 5-Day Week, Canteen, etc. Write stating age, experience, salary required to Box 603, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

APPLICATIONS are invited by well-known manufacturers of iron and steel on the North East Coast for a RAILWAY ENGINEER to supervise the installation of railway systems in connection with new works and other large scale developments. Applicants should be familiar with all modern standards of track equipment and capable of co-ordinating works' and railway contractors' staffs on site. Good salary and participation in Company's Superannuation Scheme. Reply Box 613, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25*s.* per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

DRAUGHTSMEN required by Gloucester Railway Carriage & Wagon Company, Gloucester, preferably with Steel Car or Diesel Car experience. 5-day week. Pension Scheme in operation. Apply LOCAL MINISTRY OF LABOUR AND NATIONAL SERVICE.

WANTED—Early North Midland Railway and Midland Railway publications. Write in first instance stating title and year to A. J. TURNER, 56, Boulton Lane, Alvaston, Derby.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10*s.* 6*d.*—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Youth Employment Offices remaining unfilled rose to a peak of 504,000 in July. There was a decline in the second half of the year, and in December the number was 313,000. The number of unfilled vacancies in the textile and clothing industries fell over the year but there was an increase in the number of unfilled vacancies in the metals engineering and vehicles group of industries.

Diesel Engine Users Association.—Mr. Gerald B. Fox will deliver his Presidential Address on "Diesel Digestion" to the Diesel Engine Users Association, at Caxton Hall, Westminster, S.W.1, at 2.30 p.m. on October 16.

Vickers Limited Dividend.—The directors of Vickers Limited give notice that an interim dividend of 2½ per cent. (actual), less income tax, on the ordinary stock of the company, in respect of the year 1952, will be paid on October 21 next.

Derailment Near Hamburg.—Nine passengers were killed and 32 seriously injured when an express from Lübeck to Hamburg was derailed near Hamburg on September 18. The first coach left the rails and was thrown against a bridge.

Western Region, London Lecture & Debating Society.—At a meeting of British Railways, Western Region, London Lecture & Debating Society to be held in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. on October 16, Mr. A. W. Tait, Director of Costings, British Transport Commission, will read a paper on "Costing of Road and Rail Traffic."

Record Steel Carryings by British Railways.—For the second week running British Railways carried a record tonnage of iron and steel. During the week ended September 20, 221,028 tons were conveyed from the principal iron and steelworks—some 600 tons in excess of the figure for the previous week. The tonnage of coal carried by rail during the 48 hr. ended 6 a.m. on September 29 was 369,060 tons, bringing the total for the week up to 3,177,070 tons, the heaviest weekly total for over three months.

German Transport Exhibition. — The Transport & Communications Exhibition to be held in Munich from June 20 to October 11, 1953, as announced in our issue of September 26, offers the first comprehensive view of German transport problems and activities since the war. It continues the tradition of the transport exhibition held in Munich in 1925, and visited by 3,000,000 persons. The exhibition ground (Ausstellungspark), which is being modernised, with additional pavilions and a congress hall, covers 100 acres, and there will be a special railway station, also a cable railway, a miniature passenger-carrying railway, a helicopter station, and an amusement park. The exhibition will embrace rail, road, sea, and air transport, postal services, telecommunications of all kinds, freight forwarding, warehousing, and tourist activities. The exhibits will include products of firms manufacturing railway and other forms of transport. The exhibition office is at Theresienhöhe 14, Munich 12.

Institute of Transport Presidential Address.—Mr. C. T. Brunner will deliver his Presidential Address to the Institute of Transport at the meeting to be held on Monday, October 13, at 5.45 for 6.15 p.m. at the Jarvis Hall, 66, Portland Place, London, W.1.

New Metrovick and Ediswan Premises at Birmingham.—The new Birmingham district offices of the Metropolitan-Vickers Electrical Co. Ltd., and the Edison Swan Electric Co. Ltd., at 10/12, Hospital Street, were opened on September 10 by Alderman W. S. Lewis, Chairman of the Midlands Electricity Board. Mr. W. A. Coates, Director and Home Sales Manager, Metropolitan-Vickers Electrical Co. Ltd., Mr. H. Butterworth, Managing Director, Edison Swan Electric Co. Ltd., Mr. A. F. Bock, Birmingham District Manager, Metropolitan-Vickers, and Mr. A. H. Adey, Birmingham District Manager, Ediswan, were among those at the opening. The ceremony was followed by luncheon at the Midland Hotel, which was attended by many representatives of the various engineering interests of the district.

Institute of Transport, Metropolitan Section. — The programme of meetings arranged by the Institute of Transport, Metropolitan Section, for 1952-53 is as follows: November 3, visit of President, "An Exporter's Aspect of Shipping," by Mr. R. Farquharson; December 1, Annual General Meeting, followed by "Decline and Fall of the London Tramways," by Mr. C. F. Klapper; January 5, 1953, "Municipal Transport Undertakings," by W. J. Evans; February 2, "Symposium on British Railways—Commercial," by Mr. A. E. Hammett, "Operating." by Mr. S. W. Smart; March 2, "The Transport Needs of Agriculture," by Mr. G. A. Baxter; April 13, "The Army Transportation Service." by Mr. D. R. Stenhouse. All meetings will commence at 5.30 p.m. for 6 p.m. and are to be held at the Institute of Transport, 80 Portland Place, W.1.

Charge of Driving Train Dangerously.—A charge against an engine driver of driving a train in a dangerous manner has been dismissed at Drumshambo District Court, County Leitrim. The case arose out of a collision last June between a train and a motor car at a level crossing at Drumcong, on the 3-ft. gauge Ballinamore-Arigna branch of Coras Iompair Eireann. The motorist said he was travelling about 18 m.p.h. when he reached the crossing; as he was traversing it the train "shot out," hit the car, and jammed it against a bridge, nobody being seriously hurt. He denied that his engine failed on the crossing and that the car was stationary when the train came along. The engine driver maintained that he had whistled, and was only 5 yd. away when he saw the car stationary on the line, when he braked.

Compensation Under Iron & Steel Act.—The Ministry of Supply announces that total compensation for the 146 agreed securities laid down by the Iron & Steel Act, 1949, has been finalised at some £246 million.

Barsi Light Railway Dividend.—The directors of the Barsi Light Railway Co. Ltd. have decided to recommend at the forthcoming annual meeting a final dividend on the ordinary stock in respect of the half-year to March 31, 1952, of 2 per cent. actual, payable on October 29, less income tax at 9s. 6d. in the £. The meeting will be held on October 28.

B.E.A. Results.—The annual report of British European Airways discloses a net loss of £1,420,000 for the year ended March 31, 1952, compared with a loss of £979,000 for the previous year. Lord Douglas of Kirtleside, Chairman of B.E.A., said that in the five years since B.E.A. was set up steady progress in reducing losses was made until late in 1950, when costs began to rise faster than revenue and delivery of new aircraft was delayed. Next Spring they would be offering tourist fares giving a reduction of 25 per cent. to some Continental destinations, and the Viking aircraft would have 40 per cent. more seating capacity. He hoped soon to announce reduced fares to Scotland. Lord Douglas said the air terminal at Waterloo would be inaugurated next year.

Licensing of Motorcoach Services.—The Minister of Transport has expressed his agreement with the refusal of the Licensing Authority of applications by the North Western Road Car Co. Ltd. and other road passenger transport concerns for relaxation of the restrictions on their motorcoach services between London and Manchester and Blackpool. After refusal of their applications, the companies appealed to the Minister. It is probable the Licensing Authority intended this autumn to review travel conditions in a more normal year than the Festival year 1951, when the applications first were refused. The decision of the Minister, combined with the authority given to Crosville Motor Services Limited to operate unrestricted

services between London and Liverpool, has resulted in criticism that the Minister has favoured a State-owned concern, as Crosville Motor Services is wholly State-owned.

Visit to Port Radar Station, Liverpool.—Members of the Merseyside Centre of the Institute of Traffic Administration recently visited the port radar station at Gladstone Dock, Liverpool, where the use of the equipment was explained and demonstrated. A revolving scanner at the top of the tower above the station projects on to six screens a view of any solid object within the range of its beam. By this means the progress of any ship coming within range can be plotted as it enters or leaves port, and in time of fog or darkness a ship can be safely and quickly guided into its berth.

Forthcoming Meetings

October 3 (*Fri.*).—Railway Club, 57, Fetter Lane, E.C.4, at 7 p.m. "The British Transport Museum," by Mr. J. H. Scholes, Curator, British Transport Museum.

October 3 (*Fri.*).—Public Transport Association Luncheon, at the Connaught Rooms, Great Queen Street, W.C.2, at 12.30 for 1 p.m.

October 3 (*Fri.*).—Scottish Society of Students of the Locomotive, at 302, Buchanan Street, Glasgow, C.2, at 7.15 for 7.30 p.m. Annual General Meeting.

Until October 4 (*Sat.*).—International Machine Tool Exhibition, at Olympia, W.14.

October 4 (*Sat.*).—Electric Railway Society, at Fred Tallant Hall, 153, Drummond Street, N.W.1, at 3 p.m. "The Manx Electric and Snaefell Mountain Railways," by Mr. J. H. Meredith.

October 4 (*Sat.*).—Permanent Way Institution, Leeds Section. Visit to underground works at Lofthouse Colliery, at 9 a.m.

October 6 (*Mon.*) to 11 (*Sat.*).—Photographic Exhibition organised by the Railway Correspondence & Travel Society, in association with the Railway Photographic Society, at Railway Executive Headquarters, 222, Marylebone Road, N.W.1. Open between 11 a.m. and 8 p.m.

October 8 (*Wed.*).—Society of Chemical Industry, Corrosion Group, in the Chemical Society's Rooms, Burlington House, Piccadilly, W.1, at 6.30 p.m. Discussion on "Filiform Corrosion and Related Phenomena."

October 8 (*Wed.*).—Institute of Welding, at the Institution of Civil Engineers, Great George Street, S.W.1, at 6.30 p.m. Presidential Address, by Mr. A. Robert Jenkins.

October 8 (*Wed.*).—British Railways, Southern Region, Lecture & Debating Society, at the Chapter House, St. Thomas' Street, London Bridge, S.E.1, at 5.45 p.m. Brains Trust.

October 9 (*Thu.*).—Institution of Electrical Engineers, Savoy Place, W.C.2, at 5.30 p.m. Inaugural Address as President by Colonel B. H. Leeson.

October 11 (*Sat.*).—Permanent Way Institution, London Section, joint meeting with Birmingham Section members, at Birmingham.

October 11 (*Sat.*).—Ticket & Fare Collection Society, at 32, Russell Road, Kensington, W.14, at 2.30 p.m. Annual General Meeting.

Railway Stock Market

The activity and strength of Japanese bonds have dominated stock markets, but generally there has been a firmer trend under the lead of a rally in British Funds. The view seems to have gained ground that conversion offers expected before long in respect of the £450,000,000 of 1¼ per cent. Funding stock and also in respect of British Transport's £60,000,000 of 1¾ per cent. one-year stock are likely to be accompanied by isues of additional stock. If this proves the case, British Funds might show a renewed reaction during the next few weeks, though this would probably be only a temporary development, bearing in mind that, taking more than a very short view, sentiment in this market would benefit considerably if the Commonwealth Conference were to decide on important moves for strengthening sterling and gold and dollar reserves. Free convertibility of sterling seems impossible at this stage unless it were backed by a substantial dollar loan from Canada, because in the early stages of free convertibility there probably would be a rush by foreign holders to convert sterling into dollars. Although industrial shares have been steadier generally, buyers remained very cautious, with the continued tendency to await developments in engineering wage demands.

The exceptional activity in Japanese bonds and increased business in other foreign bonds overshadowed foreign rails, though the latter attracted rather more attention.

White Pass & Yukon common shares remained a lively market accompanied by continued, but unconfirmed, talk of the possibility of an offer for control by U.S.A. interests at well over the current market price. The latter has not held best levels, but after being down to close on 20 dollars has recovered to 21⅜ dollars at the time of going to press. The 5 per cent. convertible debentures at £74½ also reflected a fair amount of profit-taking. The 4½ per cent. first debentures were quoted at £31.

Canadian Pacifics at 61¼ dollars eased with the general trend in dollar stocks, though it is being suggested that dollar stocks generally may go ahead next month, because the result of the American Presidential election could bring a temporary boom to New York markets. Canadian Pacific 4 per cent. non-cumulative preference stock was £65 and the 4 per cent. debentures £80¼.

A minor feature has been a rally in Antofagasta stocks with the ordinary at 10½ and the preference stock 51, while the yield on the 5 per cent. (Bolivia) debentures seemed to be attracting attention, and business at 71¼ was recorded.

United of Havana stocks remained rather more active with the 5 per cent. (1906) debentures at 16¼. The 4½ per cent. Cuban Central debentures changed hands up to 44½ and the Western debentures at 20½.

Manila "A" debentures were 80 and the preference shares firmed up to 9s. Mexican Central "A" debentures eased to 69½. Nitrate Rails shares were 19s. and Taltal shares changed hands around 15s.

Brazil Rail bonds strengthened to 6½, and San Paulo 10s. units have been firmer at 11s.

There have been small mixed movements among road transport shares. Southdown were 76s. 3d. and Lancashire Transport 41s., while West Riding eased to 32s. and Rhondda Transport changed hands at 28s. 9d.

Not much business was done in engineering and kindred shares. Vickers eased further to 43s. 6d., Cammell Laird 5s. shares were 11s. 7½d., Babcock & Wilcox firmed up to 69s., and Guest Keen were 53s. 7½d. Apart from the disposition to await the outcome of the higher wages claim by the engineering unions, a factor making for a waiting attitude, is the Government's steel denationalisation plan, which is likely to be disclosed soon after Parliament meets on October 14.

Central Wagon shares have held the big advance to 97s. which followed dropping of the Inland Revenue tax claim. The company is to place before shareholders recommendations resulting from the new position, and the market expects a substantial return of capital.

Charles Roberts 5s. shares have risen to 22s. 3d. because of the hope of a favourable tax settlement. Beyer Peacock held firm at 31s., Hurst Nelson were 49s. 6d., Birmingham Carriage 32s. 6d. and North British Locomotive 14s. 9d. Gloucester Wagon 10s. shares were easier at 12s. 3d. after the annual results, while Vulcan Foundry were 23s., and Wagon Repairs 5s. shares 12s. 9d.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week, or month ended	Traffics for week: This year	Inc. or dec. compared with 1950/51	No. of week	Aggregate traffics to date: Total 1951/52	Increase or decrease
				£	£		£	£
South & Cen. America	Antofagasta ...	800	19.9.52	141,630	+ 38,650	38	5,751,560	+ 1,279,860
	Costa Rica ...	281	Aug., 1952	c1,393,110	+ c97,299	9	c2,856,268	+ c287,598
	Dorada	70	Aug., 1952	38,470	+ 1,494	35	273,997	— 14,450
	Inter. Ctl. Amer....	794	July, 1952	$1,032,978	— $15,127	30	$7,977,146	— $2,610
	Paraguay Cent. ...	274	19.9.52	G696,282	+ G389,023	10	G6,775,622	+ G2,790,081
	Peru Corp. ...	1,050	Aug., 1952	$9,656,000	+ $997,000	9	$19,162,000	+ $2,578,000
	,, (Bolivian Section)	66	Aug., 1952	Bs.15,591,000	+ Bs.1,629,000	9	Bs.31,978,000	+ Bs.4,987,000
	Salvador	100	May, 1952	c153,000	+ c15,000	48	c1,899,000	+ c32,000
	Taltal	122	Aug., 1952	$2,927,000	+ $862,000	9	$5,187,000	+ $1,332,08
Canada	Canadian National†	23,473	Aug., 1952	19,081,000	+ 746,000	35	147,991,000	+ 12,221,000
	Canadian Pacific†...	17,037	July, 1952	13,064,000	+ 1,132,000	30	87,106,000	+ 6,182,000
Various	Barsi Light* ...	167	July, 1952	44,155	— 11,670	17	124,140	— 29,610
	Gold Coast ...	536	July, 1952	260,241	+ 5,354	17	1,179,541	+ 119,405
	Mid. of W.Australia	277	July, 1952	50,950	— 1,857	4	50,950	— 1,857
	South Africa ...	13,398	30.8.52	1,963,520	+ 86,846	22	42,915,071	+ 1,773 371
	Victoria	4,744	May, 1952	2,183,278	+ 229,476	48	—	—

* Receipts are calculated at 1s. 6d. to the rupee † Calculated at $3 to £1